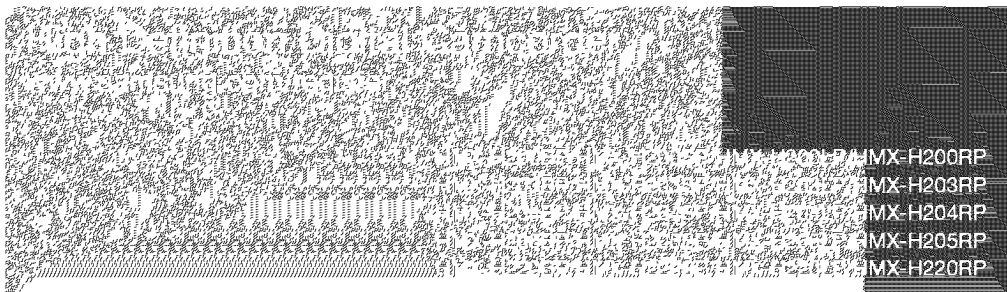




# User Manual



# advanced recording

## Quick View

Using the Quick View function, you can view the most recently recorded video and photo images as soon as the recording is finished.

### PRECHECK!

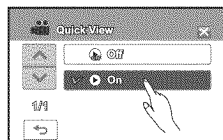
Select the record mode by pressing the **MODE** button. →page 23

1. Touch the Menu (MENU) tab → “Quick View.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (EXIT) or Return (RETURN) tab.



### Submenu items

- **Off:** Quick View icon does not appear on the screen after you finish the recording.
- **On:** Quick View icon appears on the screen as soon as you finish the recording. Touch the Quick View icon to view the most recent video or photo you have recorded. After the Quick View is completed, your camcorder switches back to the standby mode.



**Tip** If you touch the delete (DELETE) tab during Quick View, the file is deleted.






- **The Quick View function is not available in the following conditions:**
  - If the mode has been changed after the recording
  - If the USB cable is connected to the camcorder.
  - If the camcorder has been restarted after the recording
  - After playing Quick View
- For photos recorded with the “**Cont. Shot**,” only the most recent file is played.

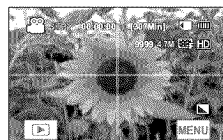
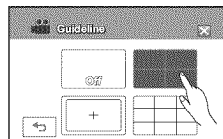
## Guideline

Guideline displays straight line patterns on the LCD screen that can help you set the image composition when recording images. The camcorder provides 3 types of guidelines.




**PRECHECK!**

Select the record mode by pressing the **MODE** button. ➡ page 23

1. Touch the Menu () tab → “Guideline.”
2. Touch the desired guideline according to the subject.
  - The selected guideline appears on the screen.
3. To exit the menu, touch the Exit () or Return () tab.



### Submenu items

- **Off:** Disables the function.
- : Placing the subject at the centre cross point puts the subject in the middle of the frame.
- : Positioning subjects within the Safety Zone rectangle ensures they will be recorded.
- : For recording multiple subjects. Putting subjects at or near the grid cross points creates a balanced composition.



- Positioning a subject at the cross point of a guideline provides a balanced composition.
- Guidelines are not recorded.

# advanced playback

## Play Option

You can set a specific playback style according to your preference.

### PRECHECK!

Touch the Play (⏮) → HD (HD) or SD (SD) tab on the LCD screen. → page 43

1. Touch the Menu (MENU) tab → “Play Option.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (X) or Return (⏮) tab.



### Submenu items

- **Play All** (ALL): Plays video clips in succession starting from the selected video to the last one, then returns to the thumbnail index view.
- **Play One** (ONE): Plays the selected video only and returns to the thumbnail view.
- **Repeat All** (REPEAT): Repeats playing all the video clips until the Return (⏮) tab is touched.
- **Repeat One** (REPEAT): Repeats playing the selected video only until the Return (⏮) tab is touched.



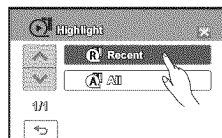
# Highlight

This camcorder shows a section of the recorded video(s) at random.

## PRECHECK!

Touch the Play (⏮) → HD (HD) or SD (SD) tab on the LCD screen. → page 43

1. Touch the Menu (MENU) tab. → “Highlight.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (X) or Return (⏮) tab.
  - When the highlight view is finished, the video thumbnail view appears.
  - In the highlight play mode, you can adjust the volume by touching the screen and can also cancel the playback.



### Submenu items

- **Recent** (RECENT): Shows a section of the videos that were created within the last 24 hours.
- **All** (ALL): Shows a section of all video files.

## Tip

Highlight playback time to the recording time for a video

Time recorded	Highlight playback time
Less than 5 sec.	Full playback
5 to 30 sec.	Plays 5 seconds.
30 sec. to 5 min.	Plays 5 seconds of each 30 second section.
5 min. to 10 min.	Plays 11 seconds of each 2 minute section.
Over 10 min.	Plays 15 seconds of each 3 minute section.



If you execute the Highlight function in the date thumbnail display, all the files in the selected date set appear on the LCD screen.

# advanced playback

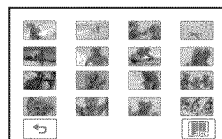
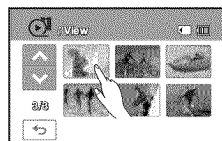
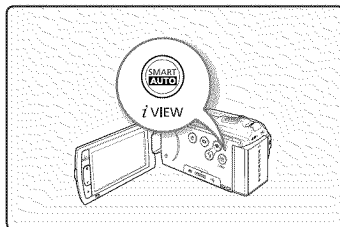
## iVIEW

This function provides the preview of storyboard to be printed, which gives you digest of the recorded video without viewing the whole sequence of it.

### PRECHECK!

Touch the Play (▶) → HD (HD) or SD (SD) tab on the LCD screen. → page 43

1. Press the **iVIEW** button.
2. Touch the desired video.
  - Sampling 16 i-Frame images appears on the LCD screen.
  - The images from the selected video are selected arbitrarily, and compose the preview of storyboard to be printed.
  - When a thumbnail is selected among 16 i-Frame images, playback starts from the thumbnail.
3. To save the storyboard image on the storage media, touch the Story-board print (Print) tab → “Yes.”
  - You can find the saved storyboard image in the photo thumbnail view.



In the following case, it can not be extracted with all 16 i-Frame thumbnails:

- In case thumbnail is displayed by the date (DATE).
- Recorded video is too short (to extract 16 i-Frame thumbnails from a video, its recorded time should be longer than 32 seconds.)

# Story-Board Print

Using the storyboard printing, you can make the digest image of your video abridging its story. This function captures 16 still images arbitrarily from the selected video and makes up one still image of 16-splits to save it into the storage media. It presents a quick overview of your video, helping you to understand the whole story of the video.

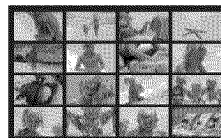
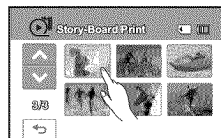
## PRECHECK!

Touch the Play (▶) → HD (HD) or SD (SD) tab on the LCD screen. → page 43

1. Touch the Menu (MENU) tab → **“Story-Board Print.”**
2. Touch the desired video → **“Yes.”**
  - Printed storyboard image file appears on the LCD screen for a while.
  - Images to be captured are selected arbitrarily, and composes storyboard of one still image with 16-split still frames.
  - You can also find the saved storyboard image in the photo thumbnail view.



- The Story-Board Print function is not available in the following conditions:
  - If free space available on the storage is insufficient.
- The storyboard printing may not show all 16 i-Frame thumbnails in following case:
  - Recorded video is too short (to extract 16 i-Frame thumbnails from a video, its recorded time should be longer than 32 seconds.)



## File Info

You can see the image information for all images.

## PRECHECK!

Touch the Play (▶) tab on the LCD screen to select the play mode. → page 23

1. Touch the Menu (MENU) tab → **“File Info.”**
2. Select the desired file to view the file information.
  - The information of the selected file appears.
3. To exit the menu, touch the Return (◀) tab.



# system setting

## Storage Type (HMX-H203/H204/H205 only)

You can record videos and photos on the internal memory or a memory card, so you should select the desired storage media before starting recording or playback. ➔ page 27

## Storage Info (HMX-H203/H204/H205 only)

This function shows you the storage information of the selected storage media, such as used and available memory space, etc.

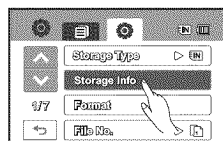
### PRECHECK!

Insert a memory card in the camcorder before viewing the storage information.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Storage Info.”
2. Touch the desired submenu item.
  - Used memory space, available memory space for use, and the recordable time depending on the selected video resolution appears.
3. To exit the menu, touch the Return (⏪) tab.

### Submenu items

- **Internal Memory:** Displays the storage information of the internal memory.
- **Card:** Displays the storage information of the memory card.



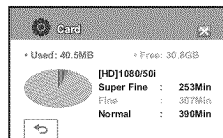
## Card Info (HMX-H200/H220 only)

This function shows you the storage information of the memory card, such as used and available memory space, etc.

### PRECHECK!

Insert the memory card in the camcorder before viewing the storage information.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Card Info.”
  - Used memory space, available memory space for use, and the recordable time depending on the selected video resolution appears.
2. To exit the menu, touch the Return (⏪) tab.





# Format

---

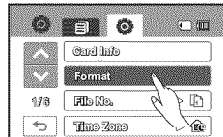
Use this function if you want to delete all files completely or to correct problems on the storage media.

## PRECHECK!

You can completely delete all files and options on the storage media, including protected files. This enables stable speeds and operation when accessing the storage media.

**Be aware that all files and data including protected files will be erased.**

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Format.”
2. Touch the desired submenu item. (HMX-H203/H204/H205 only)
  - A message appears asking about formatting the memory card.
3. Touch “Yes.”
  - The format is executed with a message.



### Submenu item (HMX-H203/H204/H205 only)

- **Internal Memory:** Formats the internal memory.
- **Card:** Formats the memory card.



- Do not remove the storage media or perform any other operation (such as turning off the power) during formatting. Also, be sure to use the provided AC power adapter, as the storage media may be corrupted if the battery becomes exhausted during formatting.
- If the storage media becomes corrupted, format it again.



- **Do not format the storage media on a PC or other device.**  
Make sure to format the storage media on this camcorder.
- A memory card with the protection tab set to lock will not be formatted. ➡ page 29
- If there is no storage media inserted, it can not be selected. Then it will be dimmed on the menu.
- The memory card format is executed by touching “Format.” (HMX-H200/H220 only)

# system setting

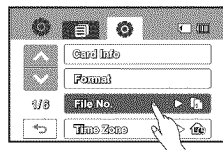
## File No.

File names (numbers) are assigned to recorded images according to the selected numbering option.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “File No.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏏) or Return (⏪) tab.

### Submenu items

- **Series** : Assigns file numbers in sequence even after you replace or format the storage media or delete all files. Each file is given with a unique file number that allows convenient image management on a PC.
- **Reset** : Resets the file number to 0001 after formatting or deleting all files or inserting a new memory card.



When you set “File No.” to “Series,” each file is assigned with a different number so as to avoid duplicating file names. It is convenient when you want to manage your files on a computer.

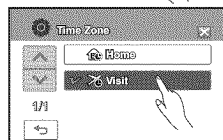
## Time Zone

You can easily set the clock to the local time when using your camcorder while traveling.

1. Touch the Menu (MENU) tab → Setting (⚙️) tab → “Time Zone” → “Visit.”
2. Touch the left (⏪) or the right (⏩) tab to select the visited area.
3. Touch the (OK) tab when the time zone setting is completed.
  - The time zone set value is not applied if you finish the setting with the (⏪) tab without touching the (OK) tab.

### Submenu items

- **Home** : The clock will be used according to your setting on the Date/Time Set menu. Select it when using this camcorder for the first time or when returning the clock to your hometown date/time setting.
- **Visit** (🌐): When you visit a different time zone, it allows you to use the local time without changing your hometown time setting. The clock will be adjusted in accordance with the time difference between the two locations.



## Cities used to set the time zone

Cities	Time zone	Cities	Time zone
London, Lisbon	+00:00	Adelaide	+09:30
Rome, Paris, Berlin, Stockholm, Madrid, Frankfurt	+01:00	Guam, Sydney, Brisbane	+10:00
Athens, Helsinki, Cairo, Ankara	+02:00	Solomon Islands	+11:00
Moskva, Riyadh	+03:00	Wellington, Fiji	+12:00
Teheran	+03:30	Samoa, Midway	-11:00
Abu Dhabi, Muscat	+04:00	Honolulu, Hawaii, Tahiti	-10:00
Kabul	+04:30	Alaska	-09:00
Tashkent, Karachi	+05:00	LA, San Francisco, Vancouver, Seattle	-08:00
Calcutta, New Delhi	+05:30	Denver, Phoenix, Salt Lake City	-07:00
Kathmandu	+05:45	Chicago, Dallas, Houston, Mexico City	-06:00
Almaty, Dacca	+06:00	New York, Miami, Washington D.C., Montreal, Atlanta	-05:00
Yangon	+06:30	Caracas, Santiago	-04:00
Bangkok	+07:00	Buenos Aires, Brasilia, Sao Paulo	-03:00
Hong Kong, Beijing, Taipei, Singapore, Manila	+08:00	Fernando de Noronha	-02:00
Seoul, Tokyo, Pyongyang	+09:00	Azores, Cape Verde	-01:00

## Date/Time Set

By setting the date and time, you can display the date and time of the recording during playback. ➡ page 25

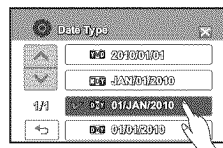
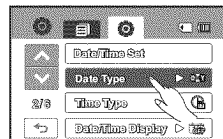
## Date Type

You can set the display type for the date set according to the selected option.

1. Touch the Menu (☰) → Setting (⚙️) tab → “Date Type.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.

### Submenu items

- 2010/01/01 : The date is displayed in the order of year/month (two-digit)/date.
- JAN/01/2010 : The date is displayed in the order of month/date/year.
- 01/JAN/2010 : The date is displayed in the order of date/month (two-digit)/year.



This function depends on “Date/Time Display” setting.

# system setting

## Time Type

You can set the display type for the time set according to the selected option.

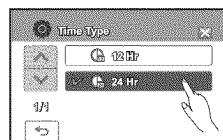
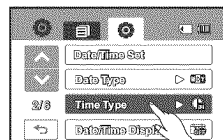
1. Touch the Menu (MENU) → Setting (⚙️) tab → “Time Type.”
2. Touch the desired display option.
3. To exit the menu, touch the Exit (⏏) or Return (⏪) tab.

### Submenu items

- **12Hr** : Displays the time information in 12 hour units.
- **24Hr** : Displays the time information in 24 hour units.



This function depends on “Date/Time Display” setting.



## Date/Time Display

You can set the date and time to be displayed on the LCD screen according to the selected option.

### PRECHECK!

Before you use the “Date/Time Display” function, you must set the date and time. ➡ page 78

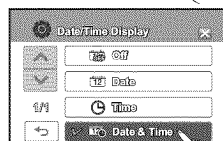
1. Touch the Menu (MENU) → Setting (⚙️) tab → “Date/Time Display.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏏) or Return (⏪) tab.
  - The date/time is displayed on the LCD screen according to the selected option.

### Submenu items

- **Off** : Current date/time information is not displayed.
- **Date** : Displays the current date.
- **Time** : Displays the current time.
- **Date & Time** : Displays the current date and time.



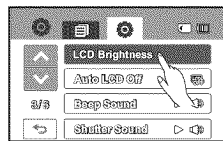
- The date/time will read “01/JAN/2010 00:00” in the following cases:
  - When the built-in rechargeable battery is depleted.
- This function depends on “Date Type” and “Time Type” setting.



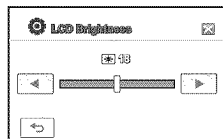
# LCD Brightness

You can adjust the brightness of the LCD screen to compensate for ambient lighting conditions.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “LCD Brightness”
2. Touch the decrease (◀️) or increase (▶️) tab to adjust the setting values as you want.
  - You can set values for LCD brightness between 0 and 35.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.



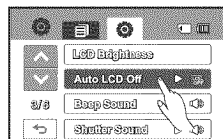
- If the surrounding is too bright, adjust the brightness of the LCD screen.
- Adjusting the LCD screen does not affect the image being recorded.
- Brighter LCD screen consumes more power.



## Auto LCD Off

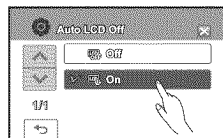
To reduce power consumption, the brightness of the LCD screen is automatically dimmed if the camcorder is idle for more than 2 minutes.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Auto LCD Off.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.



### Submenu items

- **Off** : Disable the function.
- **On** : When the camcorder is idle for more than 2 minutes in the STBY mode, or for more than 5 minutes when recording a video, the power saving mode starts by dimming the LCD screen.



< In the STBY mode >

After 2 minutes



< LCD screen is darkened >



< During recording >

After 5 minutes



< LCD screen is darkened >



- When this “Auto LCD Off” function is enabled, you can press any button on the camcorder to return LCD brightness to normal.
- **Auto LCD Off will be disabled in the following cases:**
  - If the AC power adaptor is connected.
  - While the Demo function is in operation.

# system setting

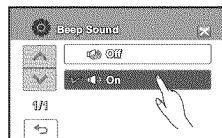
## Beep Sound

This setting allows operations such as touching tabs and buttons on the screen to be signaled by a beep.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Beep Sound.”
2. Touch the desired submenu item.
3. To exit, touch the Exit (⌂) or Return (↩️) tab until the menu disappears.

### Submenu items

- **Off** : Disables the function.
- **On** : You will hear a beep sound when operating buttons or tabs such as the **Power** (⏻) button or **recording start/stop** button.



The **Beep Sound** is cancelled in the following cases:

- During recording, playing
- When the camcorder has a cable connection. (component/AV cable, HDMI cable, etc.)

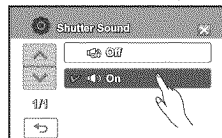
## Shutter Sound

You can turn the shutter sound on or off when pressing the **PHOTO** button.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Shutter Sound.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⌂) or Return (↩️) tab.

### Submenu items

- **Off** : Disable the function.
- **On** : You will hear the shutter sound when operating the **PHOTO** button.



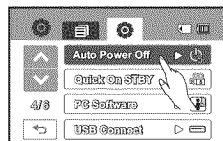
The **Shutter Sound** is not heard in the following conditions:

- In case of using the **PHOTO** button during video recording.
- When the camcorder has a cable connection. (component/AV cable, HDMI cable, etc.)

## Auto Power Off

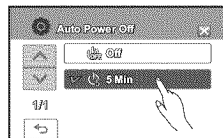
You can set your camcorder to automatically turn off if it is idle for 5 minutes without an operation. This function will prevent unnecessary power consumption.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Auto Power Off.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (EXIT) or Return (RETURN) tab.



### Submenu items

- **Off** : Disable the function.
- **5 Min** : The camcorder turns off if idle for 5 minutes without an operation.



- **Auto Power Off does not work in the following situations:**
  - When the camcorder has a cable connection. (HDMI cable, component/AV cable, USB cable, etc.)
  - While the Quick On STBY function is in operation.
  - While the Demo function is in operation.
  - While in recording, playing (except pause), photo slide show.
- To operate the camcorder again, press the **Power** (⏻) button.

# system setting

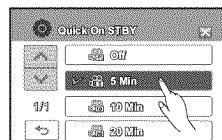
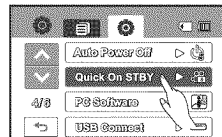
## Quick On STBY

When you are going to record frequently for an extended time, use the Quick On STBY function. In standby mode, closing the LCD screen will commence the Quick On STBY mode to reduce energy consumption. Once you are ready to record again, this function enables to the camcorder to come on quickly from the power saving mode.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Quick On STBY.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.
  - In the standby mode, closing the LCD screen will soon execute the Quick On STBY mode, and then the camcorder turns off after the selected time setting.

### Submenu items

- **Off** : In the standby mode, closing the LCD screen turns off the camcorder.
- **5 Min** : In the standby mode, closing the LCD screen will soon execute the Quick On STBY mode, and then the camcorder turns off after 5 minutes.
- **10 Min** : In the standby mode, closing the LCD screen will soon execute the Quick On STBY mode, and then the camcorder turns off after 10 minutes.
- **20 Min** : In the standby mode, closing the LCD screen will soon execute the Quick On STBY mode, and then the camcorder turns off after 20 minutes.



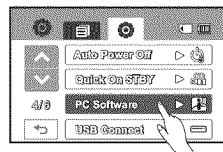
- Turning off the camcorder after use is always recommended to reduce the energy consumption, however, you can effectively use the Quick On STBY function for the frequent shooting conditions in the specified time schedule.
- The mode indicator keeps blinking in the Quick On STBY mode.
- **The Quick On STBY mode is not available in the following conditions:**
  - When the LCD screen is open.
  - When a video cable (HDMI, Component/AV) or the USB cable is connected to the camcorder.
  - When operating the buttons on the camcorder.



## PC Software

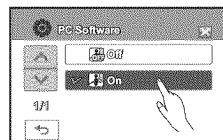
If you set PC Software to On, you can simply use the PC software by connecting the USB cable between the camcorder and your PC. You can download the stored video and photo images on the camcorder to your PC's hard disk. Editing video/photo files is also available using the PC software.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “PC Software.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.



### Submenu items

- **Off** : Disables the function.
- **On** : The built-in editing software launches when the camcorder is connected to the PC.



- The PC Software function is not available in the following conditions:
  - If “USB Connect” is set to “PictBridge”
- To enable the PC Software function, set “USB Connect” to “Mass Storage,” in the system setting menu option.
- The PC Software is compatible with the Windows OS only.

# system setting

## USB Connect

You can transfer data to a PC or print photos directly by establishing the USB connection.

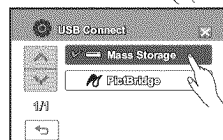
1. Touch the Menu (MENU) → Setting (⚙️) tab → “USB Connect.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.

### Submenu items

- **Mass Storage** : Connect to a PC to transfer videos or photos. ➡ page 115
- **PictBridge** : Connect to a PictBridge printer to print photos directly (when using the PictBridge function). ➡ page 100



Before connecting a USB cable, check whether the current USB mode is appropriate for the function to be used.



## HDMI TV Out

You can set the HDMI video output to match the TV you have connected.

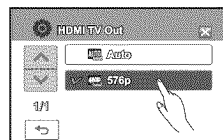
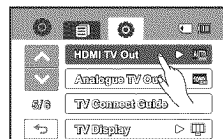
### PRECHECK!

Using the HDMI cable (not supplied), connect the camcorder to your TV. ➡ page 102

1. Touch the Menu (MENU) → Setting (⚙️) tab → “HDMI TV Out.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.

### Submenu items

- **Auto** : The video signals are output in the same format as the recorded file. Use this setting only when connecting to an HDTV.
- **576p** : The recorded file is output in the 720x576p format. Use this setting only when connecting to a regular TV which supports the progressive scan at the SD (Standard Definition) level by using the HDMI jacks.



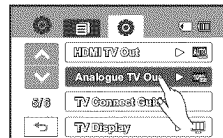
# Analogue TV Out

You can set the component or composite video output to match the TV you have connected.

## PRECHECK!

- Using the component/AV cable provided with your camcorder, connect the camcorder to your TV.  
→ page 103~104
- This camcorder provides the two-in-one component/AV cable that fits the purpose of the component and the AV cable. Therefore, when using the component/AV cable, you must check the right method for the TV output by setting the “**Analogue TV Out**” menu.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “**Analogue TV Out.**”
2. Touch the desired submenu item.
  - Check the TV type, connection jack, and the resolution of the recorded video before you choose the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏮️) tab.



### Submenu items

- **Component 1080i (1080i)**: The recorded file is output in the 1920x1080i format. Use this setting only when connecting to an HDTV by using the component (Y/Pb/Pr, Audio) jacks.
- **Component 576p (576p)**: The recorded file is output in the 720x576p format. Use this setting only when connecting to a regular TV which supports the progressive scan at the SD (Standard Definition) level by using the component (Y/Pb/Pr, Audio) jacks.
- **Component 576i (576i)**: The recorded file is output in the 720x576i format. Use this setting only when connecting to a regular TV which only supports the SD (Standard Definition) resolution without the progressive scan by using the component (Y/Pb/Pr, Audio) jacks.
- **Composite (COMP)**: The composite video signals are output via the component/AV cable (blue). Use this setting only when connecting to a regular TV that has no component video jacks.



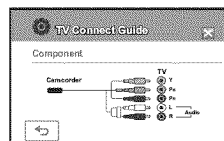
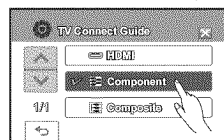
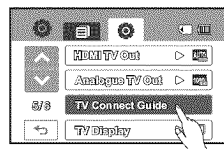
- The Analogue TV Out indicator is displayed only when the camcorder is connected to a TV.
- For details on TV specification, refer to the user manual of the connected TV.

# system setting

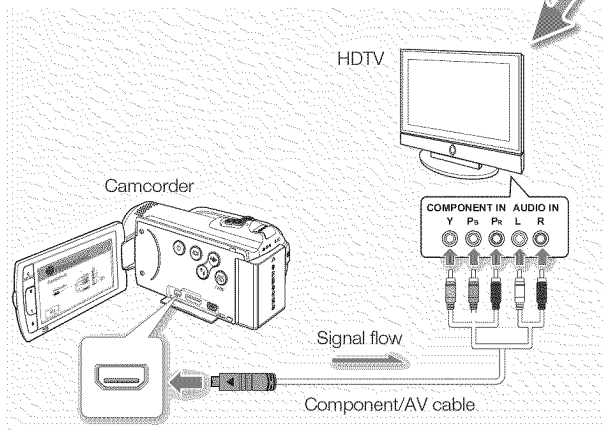
## TV Connect Guide

You can view the TV Connect Guide before you connect the camcorder to your TV set.

1. Touch the Menu (MENU) tab → Setting (⚙️) tab → “TV Connect Guide.”
2. Touch the desired submenu item.
  - TV Connect Guide appears depending on the selected submenu items.
  - Refer to the TV Connect Guide when connect your camcorder with other external devices.
3. To exit the menu, touch the Exit (⌂) or Return (⏮️) tab.



Component



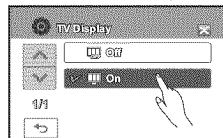
## TV Display

You can enable or disable the On Screen Display (OSD) that appears on the TV screen when connecting your camcorder to a TV.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “TV Display.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (⏮️) or Return (⏭️) tab.

### Submenu items

- **Off** : The OSD (On Screen Display) menus are only shown on the LCD screen.
- **On** : The OSD menus are shown on the LCD screen and the TV screen as well.

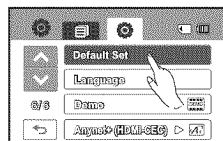


The thumbnail display and demo screens are shown on the TV even if you set “TV Display” to “Off.”

## Default Set

You can restore all menu settings to the default conditions.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Default Set.”
  - A message appears asking for your confirmation.
2. Touch “Yes” if you want all the settings return to the default.
  - The Time Zone screen appears after all settings return to the default.
3. Set the date and time again. ➡ page 25



- Do not turn off the power while using this function.
- Initialising the camcorder settings to factory defaults does not affect recorded images.

# system setting

## Language

You can select a desired language to display the menu and messages. ➔page 26

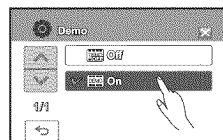
## Demo

Demo mode automatically shows you the major functions that are included with your camcorder so that you may use them more easily.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Demo.”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (EXIT) or Return (RETURN) tab.

### Submenu items

- **Off** : Disable the function.
- **On**: Enables the Demo function.



### Using the Demo function

The Demo mode is cancelled in the following cases:

- If the LCD screen is touched.
- If any button is operated (**Recording start/stop**, **Q.MENU**, **Display** (DISP), **SMART AUTO**, **MODE**, **PHOTO**, etc.)

However, the camcorder will enter the Demo mode automatically after 5 minutes in STBY mode if it is idle for 5 minutes without an operation. If you don't want the Demo function starts, set “Demo” to “Off”.



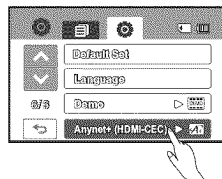
### The Demo function does not operate in the following cases:

- If “Auto Power Off” is set to “5 Min”(uses the battery as main power), the Auto Power Off function will turn the camcorder off before Demo can run.

## Anynet+ (HDMI-CEC)

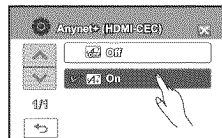
This camcorder supports Anynet+. Anynet+ is an AV network system that enables you to control all connected Samsung AV devices with an Anynet+ supported Samsung TV remote control.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “Anynet+ (HDMI-CEC).”
2. Touch the desired submenu item.
3. To exit the menu, touch the Exit (EXIT) or Return (↩️) tab.
  - When the camcorder is connected to the Anynet+ supported TV, you can operate some functions of the camcorder using the TV's remote control.



### Submenu items

- **Off:** Disable the function.
- **On:** The Anynet+ function is enabled.



- When you turn on the camcorder that is connected to an Anynet+ supporting TV with an HDMI cable, the TV (Anynet+ supported) is automatically turned on. If you do not want to use this Anynet+ function, set the “**Anynet+ (HDMI-CEC)**” to “**Off**.”
- For details on the Anynet+ (HDMI-CEC) function, refer to the user manual of Samsung's Anynet+ supported TV.

# editing video clips

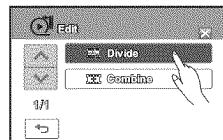
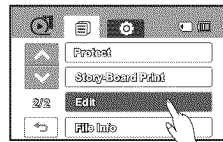
## DIVIDING A VIDEO

You can divide a video into two, and easily delete a section you no longer need. As this function edits the original file, make sure to back up important recordings separately.

### PRECHECK!

- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) → page 27
- Touch the Play (▶) → HD (HD) or SD (SD) tab on the LCD screen.  
→ page 43

1. Touch the Menu (MENU) tab → “Edit” → “Divide.”
2. Touch the desired video to edit.
  - The selected video is displayed as paused.
3. Search the point of division by touching playback control tabs.
  - Playback control tabs: ▶/⏸/◀◀/▶▶/◀◀/▶▶
4. Touch the pause (⏸) tab at the point of division, then touch the Cutting (✂) tab.
  - A message appears asking for your confirmation.
5. Touch “Yes.”
  - The selected video is divided into two video clips.
  - The second clip of the divided video is displayed as the last thumbnail.
  - After the division, you can partially delete a unnecessary section or combine with other videos.



Do not eject a memory card or power off while editing a video recorded on the storage media. Doing so may damage the storage media or data.



- You can not divide files that are protected (Ⓢ) indicator is written on. Cancel the protect function first. → page 96
- The divided video may drift before or after the division point by approx. 2 seconds.
- **The Divide function is not available in the following conditions:**
  - If the total recorded time of the video is less than 6 seconds.
  - If you trying to divide sections without leaving 3 seconds at the beginning and the end.
  - If the video file is recorded in the Time Lapse REC mode.
  - If the remaining section of the memory space is less than 15MB.
  - Videos recorded or edited by other devices.
  - Photos cannot be divided.
- The division function does not work if available space on the storage is insufficient. Delete unnecessary videos.
- When the video is divided into two, only the first video clip is stored in the playlist again.



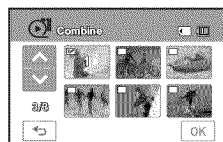
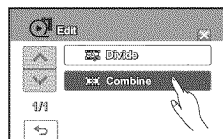
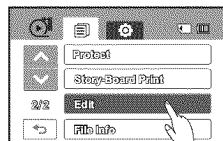
# COMBINING VIDEOS

You can combine two different videos. As this function edits the original file, make sure to back up important recordings separately.

## PRECHECK!

- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) ➔ page 27
- Touch the Play (⏮) → HD (📺HD) or SD (📺SD) tab on the LCD screen.  
➔ page 43

1. Touch the Menu (☰) tab → “Edit” → “Combine.”
2. Touch the video thumbnails to be combined.
  - The (👉) indicator and the order number are displayed on the selected videos. Touching the video thumbnail toggles the image between being selected (👉) or not selected.
  - The (👉) indicator does not appear if there is a different resolution between selected videos files.
3. Touch the (OK) tab.
  - A message appears asking for your confirmation.
4. Touch “Yes.”
  - The selected video files are combined in the chosen order and stored as one video.
  - The thumbnail of the first video will appear in the combined video.



Do not eject a memory card or power off while editing a video recorded on the memory card. Doing so may damage the storage media or data.



- You can not combine files with the protect (🔒) indicator is written on. Cancel the protect function first. ➔ page 96
- The original video will not be preserved.
- **The combine function is not available in the following conditions:**
  - Videos in different resolution formats (Videos recorded at “Video Resolution: [HD]1080/50i” and “Video Resolution: [HD]720/50p”) cannot be combined.
  - The file size of the combined videos cannot exceed 1.8 GB.
  - The video file recorded in the Time Lapse REC mode cannot be edited.
  - If the remaining section of the memory space is less than 15MB, the files cannot be combined.
  - Videos recorded or edited by other devices.
  - Photos cannot be combined.

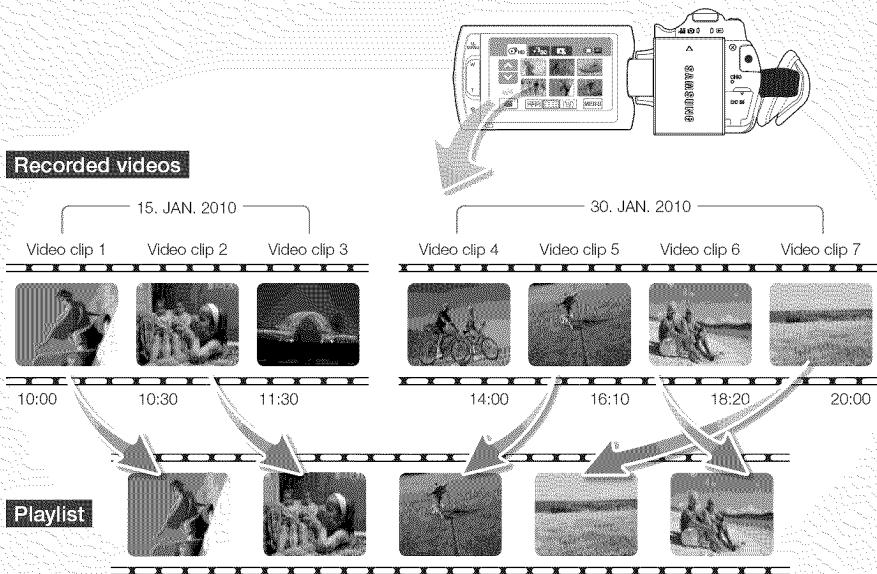
# editing the playlist

## PLAYLIST

### What's a "Playlist?"

You can create a playlist on the same storage media by gathering your favourite scenes from the recorded videos. Adding or deleting videos from a playlist does not affect the original video images.

Example: You have recorded a few scenes on the storage media. You want to save the original recording, but you also want to create a digest by putting your favourite scenes together. In this case, you can create a playlist by selecting your favourite scenes, leaving the original recording as it is.



- One playlist can be created per each resolution set, "HD (High definition)" and "SD (Standard Definition)."
- The maximum number of videos on the playlist: 9999 videos.
- If original videos are deleted, scenes on the playlist created with these videos are also deleted.

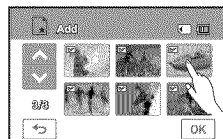
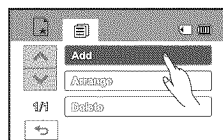
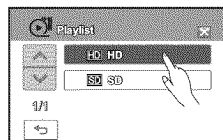
# CREATING THE PLAYLIST

You can create a playlist by gathering your desired videos from the recorded video.

## PRECHECK!

- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) ➔ page 27
- Touch the Play ( [P] ) tab on the LCD screen to select the play mode. ➔ page 23

1. Touch the Menu ( [MENU] ) tab ➔ **“Playlist.”**
  - The menu window appears for selecting the video resolution.
2. Touch **“HD”** or **“SD.”**
  - The thumbnail display appears according to the selected resolution.
3. Touch the Menu ( [MENU] ) tab, then touch **“Add.”**
  - Video thumbnails corresponding to the selected video resolution appear on the screen.
4. Touch the desired video to be added to the playlist.
  - The ( [✓] ) indicator is displayed on the selected video. Touching the video toggles the image between being selected ( [✓] ) and not selected.
5. Touch the ( [OK] ) tab.
  - A message appears asking for your confirmation.
6. Touch **“Yes.”**
  - The playlist is created.
  - You can play the playlist in the same manner as you play a video.



While editing the playlist, do not eject the memory card or power off the camcorder. Doing so may damage the storage media or data.



- If available space on the storage is insufficient, you can not create or add a playlist. Delete unnecessary videos.
- You cannot select two different resolution images for placement in the playlist.

# editing the playlist

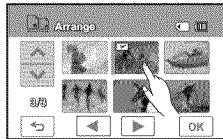
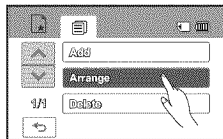
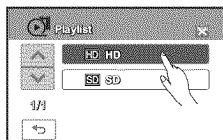
## ARRANGING VIDEOS IN THE PLAYLIST

You can change the order of videos on the playlist.

### PRECHECK!

- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) ➔ page 27
- Touch the Play (🎮) tab on the LCD screen to select the play mode. ➔ page 23

1. Touch the Menu (MENU) tab ➔ **"Playlist."**
2. Touch **"HD"** or **"SD."**
  - Video thumbnails corresponding to the selected video quality appear on the screen.
3. Touch the Menu (MENU) tab, then touch **"Arrange."**
  - The playlist appears.
4. Touch the video you want to move.
  - The (☑) indicator and the selection bar appear on the selected video. Touching the video toggles the image between being selected (☑) and not selected.
5. Touch the previous (⏮)/ next (⏭) tab to move the bar to the position you want, then touch the (OK) tab.
  - A message appears asking for your confirmation.
6. Touch **"Yes."**
  - The video moves to the selected position.



While editing the playlist, do not eject the memory card or power off the camcorder. Doing so may damage the storage media or data.

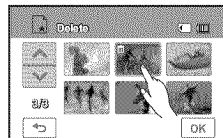
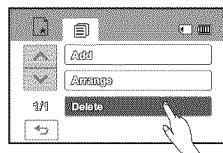
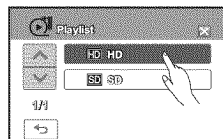
# DELETING VIDEOS FROM THE PLAYLIST

You can delete undesired videos from the playlist.

## PRECHECK!

- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) ➔page 27
- Touch the Play (⏮) tab on the LCD screen to select the play mode. ➔page 23

1. Touch the Menu (MENU) tab ➔ **"Playlist."**
2. Touch **"HD"** or **"SD."**
  - Video thumbnails corresponding to the selected video quality appear on the screen.
3. Touch the Menu (MENU) tab, then touch **"Delete."**
  - The playlist appears.
4. Touch the video you want to delete.
  - The (III) icon and the selection bar appear on the selected video. Touching the video toggles the image between being selected (III) and not selected.
5. Touch the (OK) tab.
  - A message appears asking for your confirmation.
6. Touch **"Yes."**
  - The selected videos are deleted from the playlist.



While editing the playlist, do not eject the memory card or power off the camcorder. Doing so may damage the storage media or data.

# file management

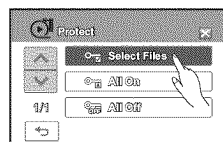
## PROTECTION FROM ACCIDENTAL ERASURE

You can protect important recordings from accidental erasure. The protected videos and photos are not deleted unless they are formatted or the protection is cancelled.

### PRECHECK!

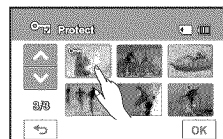
- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) ➡ page 27
- Touch the Play ([RE]) tab on the LCD screen to select the play mode. ➡ page 23

1. Touch the HD ([HD]), SD ([SD]) or Photo ([P]) tab.
  - Videos or photos appear as thumbnails.
2. Touch the Menu ([MENU]) tab → “Protect.”
3. Touch the desired submenu item.
  - The corresponding message to the selected option appears.
4. Touch “Yes.”
  - The protection is set to on or off.
  - The ([P]) indicator appears on the protected file.



### Submenu items

- **Select Files:** Protects individual images.
  - Touch the images to protect from erasure.
  - The ([P]) indicator is displayed on the selected images.
  - Touching the thumbnail image toggles the image between being selected ([P]) or not selected.
  - Touch the ([OK]) tab.
- **All On:** Protects all images.
- **All Off:** Releases the protected images all at once.



- You can also operate this function in the full and single image display mode.
- If the write protection tab on the memory card is set to lock, you cannot set this function.  
➡ page 29

# DELETING FILES

You can erase your recordings one by one, or at once.

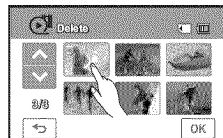
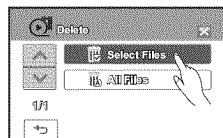
## PRECHECK!

- Insert a memory card.
- Set the appropriate storage media. (HMX-H203/H204/H205 only) ➔ page 27
- Touch the Play (⏮) tab on the LCD screen to select the play mode. ➔ page 23

1. Touch the HD (📺HD), SD (📺SD) or Photo (📷) tab.
  - Videos or photos appear as thumbnails.
2. Touch the Menu (☰) tab ➔ “Delete.”
3. Touch the desired submenu item.
4. The corresponding message to the selected option appears.  
Touch “Yes.”
  - The selected image is deleted.

### Submenu items

- **Select Files:** Deletes individual images.  
Touch the images you want to delete.  
The (III) indicator is displayed on the selected images.  
Touching the thumbnail image toggles the image between being selected (III) or not selected.  
Touch the (OK) tab.
- **All Files:** Deletes all images.



- Deleted images cannot be recovered.
- Do not eject a memory card or power off while deleting videos recorded on the storage media. Doing so may damage the storage media or data.



- To protect important images from accidental erasure, activate the image protection function in advance. ➔ page 96
- You can not delete protected files. Cancel the protect function first.
- If the write protection tab on the memory card is set to lock, you cannot delete the images. ➔ page 29
- You can also operate this function in the full and single image display mode.
- The delete function does not work if battery charge is insufficient. It is recommended to use AC power to continue power supply during the deletion.

# file management

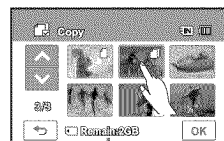
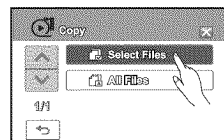
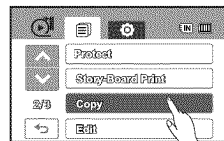
## COPYING FILES (HMX-H203/H204/H205 ONLY)

Videos and photos stored in the internal memory can be copied to the external flash memory card. Copying to the memory card does not delete originals in the internal memory.

### PRECHECK!

- Insert the memory card in your camcorder.
- Touch the Play (⏮) tab on the LCD screen to select the play mode. ➡ page 23

1. Touch the HD (📹HD), SD (📹SD) or Photo (📷) tab.
  - Videos or photos appear as thumbnails.
2. Touch the Menu (☰) tab → “Copy.”
3. Touch the desired submenu item.
4. The corresponding message to the selected option appears.  
Touch “Yes.”
  - The selected images are copied.



Remaining free space in the destination memory card

### Submenu items

- **Select Files:** Copy individual images.  
Touch the images you want to copy.  
The (📺) indicator is displayed on the selected images.  
Touching the thumbnail image toggles the image between being selected (📺) or not selected.  
Touch the (OK) tab.
- **All Files:** Copy all images.



- You can also operate this function in the full and single image display mode.
- If the write protection tab on the memory card is set to lock, you cannot copy the images.  
➡ page 29
- You can not copy a file if the memory card has insufficient free space. Remove unnecessary files before proceeding. ➡ page 97
- The copy function does not work if battery charge is insufficient. It is recommended to use AC power to continue power supply during the copying.



# printing photos

## DPOF PRINTING SETTING

On your memory card, you can write the print-out information including the number of copies to print. The saved information is used when you connect your camcorder with a DPOF-compatible printer.

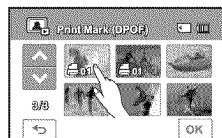
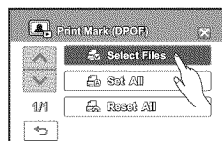
### PRECHECK!

- Insert a memory card in your camcorder.
- Touch the Play (⏮) tab on the LCD screen to select the play mode. ➡ page 23

1. Touch the Photo (📷) tab.
  - The photo thumbnails are displayed.
2. Touch the Menu (MENU) tab → "Print Mark (DPOF)."
3. Touch the desired submenu item.
4. The corresponding message appears to the selected option.  
Touch "Yes."
  - The print mark is selected or removed.
  - The (01) indicator appears on the print-marked photos.

### Submenu items

- **Select Files:** Print-marks individual images.  
The print marks indicator is displayed on the selected images. Touching the thumbnail image toggles the image between being selected (01) or not selected. Touch the (OK) tab.
- **Set All:** Print-marks all images.
- **Reset All:** Removes all the print-marks.



### Understanding DPOF

DPOF (Digital Print Order Format) allows you to set which still images on the memory card are to be printed, together with information on the number of copies to be printed.

### Tip

In single display mode, you can set the number of prints by using the decrease ([-]) or increase ([+]) tab.

- Touch the Menu (MENU) tab → "Print Mark (DPOF)" → decrease ([-]) or increase ([+]) tab.
- Up to 99 copies can be set to print of each image.



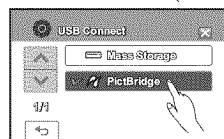
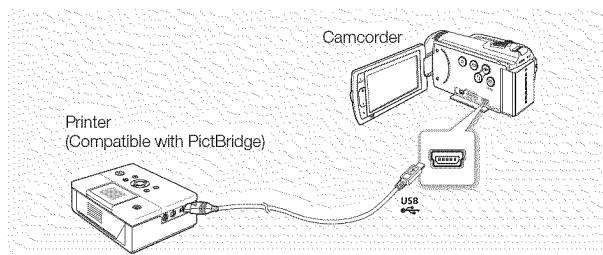
- When you select the "Set All" option, the number of copies to be printed is set to 01.
- Selecting the "Set All" or "Reset All" options may take a long time depending on the number of the selected copies.

# printing photos

## DIRECT PRINTING WITH A PICTBRIDGE PRINTER

You can print photos directly by connecting this camcorder to a PictBridge printer (sold separately) and a USB cable.

1. Touch the Menu (MENU) → Setting (⚙️) tab → “USB Connect” → “PictBridge.”
2. Use a USB cable to connect your camcorder to the printer.
3. Turn your printer power on.
  - The photo thumbnails appear.
4. Touch the photos to be print, then touch the Print (🖨️) tab.
  - The selected photo is printed.



### To set the number of prints

Touch the decrease (◀️)/increase (▶️) tab to set the number of copies to print.

- The number of copies is set.

### To cancel the print setting

Touch the Return (⏪) tab on the LCD screen.

### To stop printing after printing starts

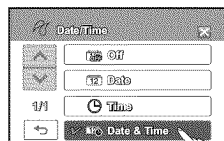
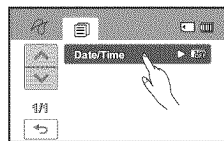
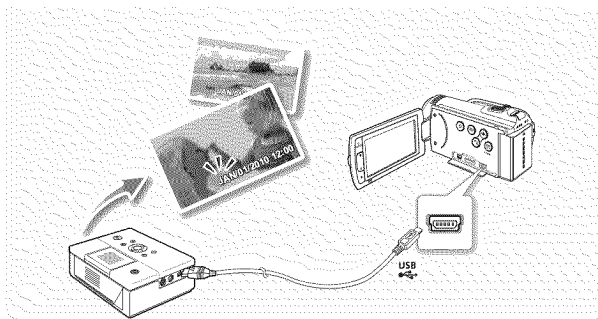
Touch “Cancel” on the screen.



- If the camcorder is connected to a printer while “USB Connect” is set to “Mass Storage,” the message “Fail USB Connecting Change ‘USB Connect’” appears. Set the “USB Connect” to the “PictBridge” then connect the USB cable again.
- Use the supplied USB cable.

## To set the date/time imprint

1. In the printer mode, touch the Menu (MENU) tab.
  - The print options appear on the screen.
2. Touch “Date/Time.”
3. Touch the desired submenu item.
  - The selected date and time display option is set.
4. To exit the menu, touch the Exit (EXIT) or Return (RETURN) tab.
  - The selected date and time will be printed on the photos.



- The date/time imprint option may not be supported by all printers. Check with your printer manufacturer. The “**Date/Time**” menu cannot be setup if the printer does not support this option.
- PictBridge™ is a registered trademark of CIPA (Camera & Imaging Products Association), an image transfer standard developed by Canon, Fuji, HP, Olympus, Seiko Epson, and Sony.
- Use the AC power adaptor for your camcorder during PictBridge direct printing. Turning the camcorder off during printing might damage data on the storage media.
- Video images cannot be printed.
- Photos recorded on other devices cannot be printed.
- Various printing options are available depending on the printer. Refer to the printer's user manual for details.

# connecting to a TV

## CONNECTING TO A HIGH DEFINITION TV

You can enjoy High Definition (HD) quality videos, recorded in “[HD]1080/50i” or “[HD]720/50p” resolution using an HDTV. The connection methods and quality of the image viewed on the TV screen differ depending on what type of TV is connected, and the connectors used. To playback high quality videos from your camcorder, check if your TV set supports the “[HD]1080/50i” resolution. This HD camcorder supports both HDMI and component output to deliver high-definition video transfer.

### PRECHECK!

- Select the HDMI or the component jack on your TV. For more information about the connectors and the connection methods, refer to the TV user manual.
- This HD camcorder provides a two-in-one component/AV cable that functions as an component and AV cable. Therefore, when using the component/AV cable, you must select the right method for the TV output by setting the “Analogue TV Out” menu. ➡ page 85

### Understanding the HDMI cable

HDMI (High Definition Multimedia Interface) is a compact audio/video interface for transmitting uncompressed digital data.

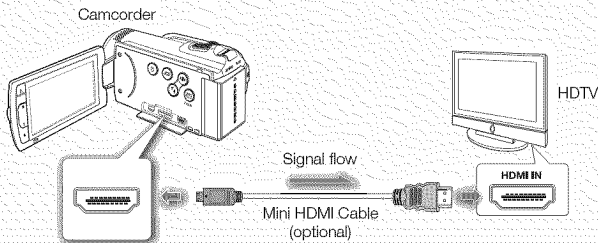
### What is Anynet+ function?

You can use the same remote control for devices that support the Anynet + function.

You can use the Anynet + function if the camcorder is connected with an HDMI cable to an Anynet+-supported TV. For more information, refer to the Anynet+ support TV's user manual.

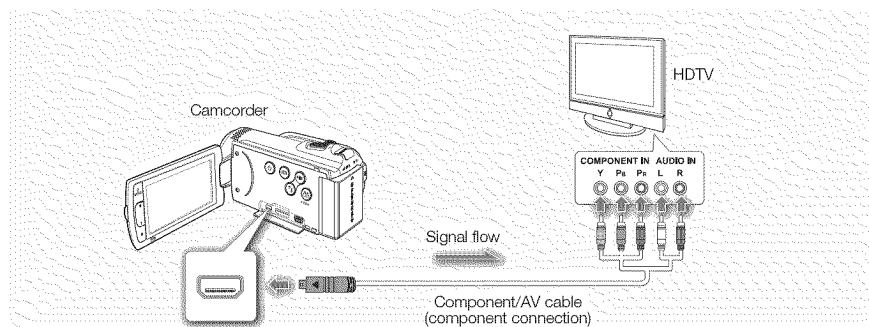
### Type A: Using a mini HDMI cable

1. Turn on the camcorder and connect a Mini HDMI cable (optional) to the HDMI jack on your TV.
  - When connecting via HDMI, the connected device may not be recognised if the camcorder is turned off.
2. Turn on your TV and set the TV's input selector to the Input your camcorder is connected to. Refer to the TV's instruction manual to see how to select the TV input.



### Type B: Using a component/AV cable

1. Connect the provided component/AV cable to the component jack, **Y-P<sub>B</sub>-P<sub>R</sub>** (Video) and **L-R** (Audio) on your TV.
  - After the connection is complete, set **"Analogue TV Out"** to **"Component 1080i."**  
→ page 85
2. Turn on your TV and set the TV's input selector to the Input your camcorder is connected to. Refer to the TV's instruction manual to see how to select the TV input.



If the **P<sub>B</sub>**, **P<sub>R</sub>**, or **Y** jack is not connected correctly, the TV screen may appear red or blue.



- When connecting to TV using the component/AV cable, match the colours between the cables and the corresponding jacks.
- Videos recorded using the HD camcorder will playback on an HDTV in the original resolution you set in the camcorder. Videos recorded in SD quality cannot playback on an HDTV in the HD quality. For example, videos recorded in HD quality (resolution of "[HD]1080/50i" or "[HD]720/50p") playback in HD quality while the videos recorded in SD quality (resolution of "[SD]576/50p") playback in the SD quality.
- This camcorder is provided with the **"TV Connect Guide"** menu function. If you try to connect the camcorder to a TV (without using the user manual), use the **"TV Connect Guide"** menu function.  
→ page 86
- You must use the provided component/AV cable. Do not use cables from other manufacturers.
- Only a C to A type Mini HDMI cable can be used with this camcorder.
- The HDMI jack on the camcorder is provided for the output usage only.
- If the Anynet+ supported TV is connected with the camcorder, turning on the camcorder may turn the TV's TV power on. (Anynet+ function) If you don't want this function, set **"Anynet+ (HDMI-CEC)"** to **"Off."** → page 89
- Use only the HDMI 1.3 cable when connecting to the HDMI jack of this camcorder. If the camcorder is connected with other HDMI cables, the screen display may not work.

# connecting to a TV

## CONNECTING TO A REGULAR TV

You can enjoy images recorded with your HD camcorder on a regular TV that supports standard definition. **Images recorded with HD (high definition) image quality (i.e. resolution of "[HD]1080/50i" or "[HD]720/50p") are played back with SD (standard definition) image quality.**

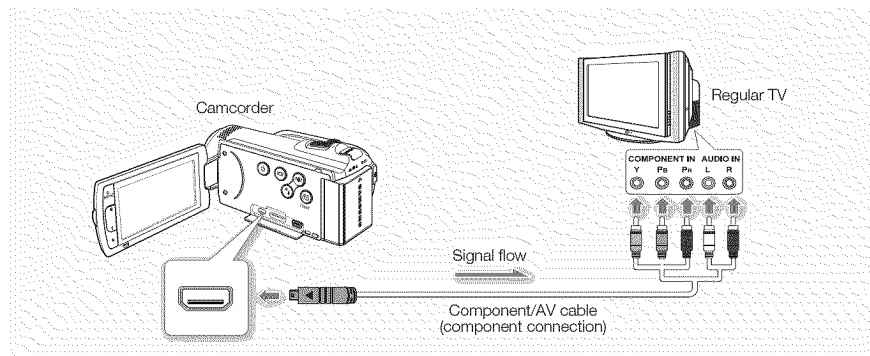
The connection methods and quality of the image viewed on the TV screen differ depending on what type of TV is connected, and the connectors used. This HD camcorder supports both component and composite output for standard definition video transfer.

### PRECHECK!

- Check your TV connection jack and select the connection method depending on the component or the composite jack. For more information about the connection jack and the method, refer to the TV user manual.
- This HD camcorder provides a two-in-one component/AV cable that functions as an component and AV cable. Therefore, when using the component/AV cable, you must select the right method for the camcorder's output by setting the **"Analogue TV Out"** menu. ➡page 85

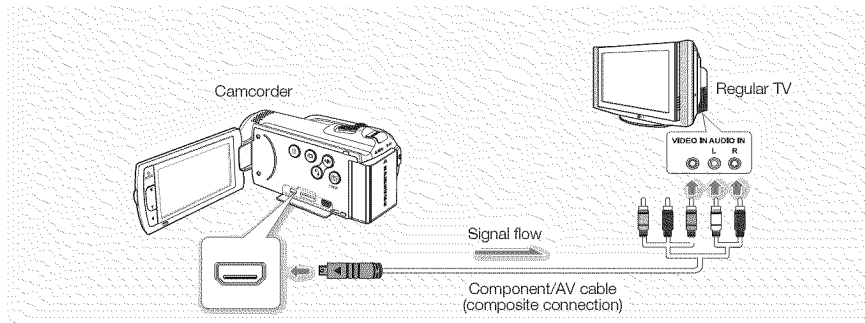
### Type A: Connecting a component/AV cable for the component output

1. Connect the provided component/AV cable to the component jack, **Y-P-B-P<sub>R</sub>** (Video) and **L-R** (Audio) on your TV.
  - After the connection is complete, set **"Analogue TV Out"** to **"Component 576p** or **Component 576i."** ➡page 85
2. Turn on your TV and set the TV's input selector to the Input your camcorder is connected to. Refer to the TV's instruction manual to see how to select the TV input.



### Type B: Connecting a component/AV cable for the composite output

1. Connect the provided component/AV cable to the composite jack, **Video** and **L-R** (Audio) on TV. Use the blue plug with the yellow label to connect to the Video input on your TV.
  - After the connection is complete, check the desired TV out method by setting "**Analogue TV Out**" to "**Composite.**" →page 85
2. Turn on your TV and set the TV's input selector to the Input your camcorder is connected to.
  - This is often referred to as "line."
  - Refer to the TV's instruction manual to see how to select the TV input.



If the **P<sub>B</sub>**, **P<sub>R</sub>**, or **Y** jack is connected incorrectly, the TV screen may appear red or blue.



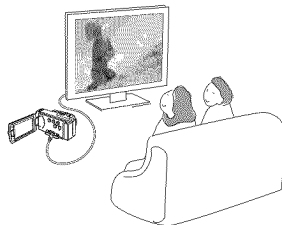
- Check the connection status between the HD camcorder and TV, the TV screen may not deliver the right video information if connected incorrectly.
- When the camcorder is connected to a TV with more than one cable, the output signal is followed in the order of priority: HDMI → component/AV output.
- Do not use excessive force when connecting the cables.
- For more information about the TV connection jack and the connecting method, refer to the TV user manual.
- Following method **Type B** above, the blue plug may not match the Video input on your TV due to the VIDEO input being labelled differently. Sometimes the TV has a **Y** input jack instead of **VIDEO**.

# connecting to a TV

## VIEWING ON A TV SCREEN

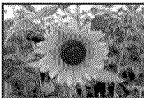
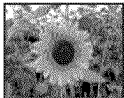
You can enjoy the enjoy widescreen videos on a HDTV (or a regular TV) after recording videos using the camcorder.

1. You see video from the camcorder on your TV if the connection status is set correctly.
  - ➡ pages 102~105
  - The TV jacks are connected with the right cables?
  - If the component/AV cable is used, "**Analogue TV Out**" is set correctly?
  - Input source list is correctly set to view the playback from the camcorder?
2. Select the playback mode on your camcorder and start to playback videos. ➡ page 44



- Adjust the volume to a moderate level. If the volume is too high, the video information may include noise.
- If the "**TV Display**" is set "**Off**," the TV screen does not include the OSD (On Screen Display) menus. ➡ page 87
- You will only hear audio from the camcorder on your TV in the video play mode.

### Playback on a TV

Recording ratio	Wide (16:9) TV	4:3 TV
Images recorded in a 16:9 ratio <ul style="list-style-type: none"><li>• Video images</li><li>• Photo images</li><li>• Photo capture images</li></ul>		



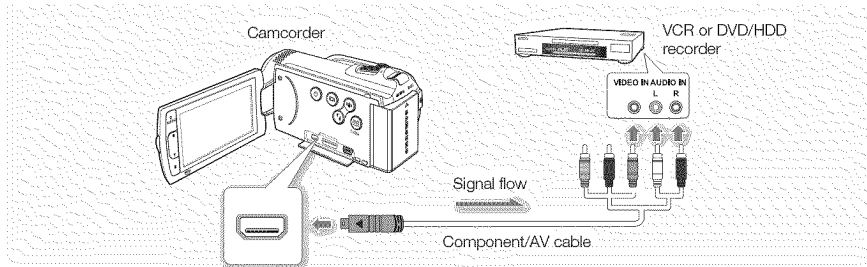
# dubbing videos


## DUBBING TO A VCR OR DVD/HDD RECORDER

You can dub images played back on your camcorder to other recording devices, such as VCRs or DVD/HDD recorders. Be sure to connect your camcorder to the wall outlet using the supplied AC power adaptor for this function.

### PRECHECK!

Since dubbing is performed via analogue data transfer (composite connection), use the supplied component/AV cable.



1. Turn on your camcorder and touch the play () tab.
  - Set the camcorder's output signal to the TV using the **"Analogue TV Out"** function.  
→ page 85
2. Insert the recording media in the recording device.
  - If your recording device has an input selector, set it to the input mode.
3. Connect your camcorder to the recording device (VCR or DVD/HDD recorder) with the supplied component/AV cable (composite connection).
  - Connect your camcorder to the input jacks of the recording device.
4. Start the playback on your camcorder, and record it on the recording device.
  - Refer to the instruction manuals supplied with your recording device for details.
5. When dubbing is finished, stop the recording device, and then your camcorder.



- Videos recorded on this camcorder can be dubbed by connecting with the supplied component/AV cable. All the recorded videos will be dubbed with SD (standard definition) image quality, regardless of the recording resolution (HD/SD).
- You cannot dub to a recorder with an HDMI cable.
- To copy a video recorded with HD (high definition) image quality, use the built-in software of your camcorder, and copy the images to your computer.
- Since dubbing is performed via analogue data transfer, the image quality may deteriorate.
- To hide the screen indicators (such as a counter, etc.) on the screen of the monitor device connected, set **"TV Display: Off."** → page 87
- When you are connecting your camcorder to a monaural device, connect the blue plug of the component/AV cable to the video input jack, and the red (right channel) or the white (left channel) plug to the audio input jack on the device.

# using with a Windows computer

## CHECKING YOUR COMPUTER TYPE

This chapter explains how to connect the camcorder to a computer using the USB cable. Read this chapter carefully and be free from your burden of handling two devices at the same time.

### Check your computer type before using!!!

To view your recordings on a computer, you need to check your computer type first. Then, take the steps below according to your computer type.



#### If you are using a Windows PC

Connect your camcorder to the computer using the USB cable.

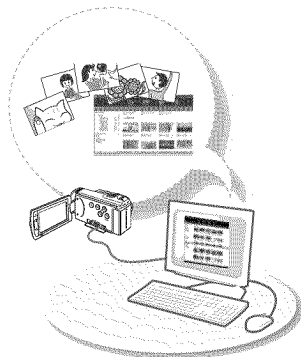
- The built-in editing software, Intelli-studio runs on the PC automatically once the camcorder is connected to Windows computer. (When you specify **"PC Software: On"**). ➡ page 83

Play back or edit your recordings on the computer using the built-in Intelli-studio application.

➡ page 112

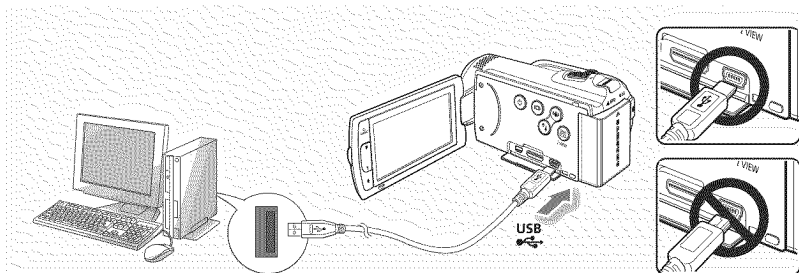
You can also upload your recordings to YouTube or other web sites using the Intelli-studio.

➡ page 113



#### If you are using a Macintosh

- The built-in software on your camcorder, 'Intelli-studio' is not Macintosh compliant.



# WHAT YOU CAN DO WITH A WINDOWS COMPUTER

You can enjoy the following operations by connecting your camcorder to your Windows computer by using the USB cable.

## Main functions

- By using the built-in Intelli-studio editing software on your camcorder, you can enjoy the following operations.
  - Playing back recorded videos or photos. ➡ page 112
  - Editing recorded videos or photos. ➡ page 112
  - Uploading the recorded videos and photos to YouTube, Flickr, Facebook, etc. ➡ page 113
- You can transfer or copy the files (videos and photos) saved on the storage media into your computer. (the mass storage function) ➡ page 115

## System requirements

The following requirements must be satisfied to use built-in editing software (Intelli-studio):

Items	Requirement
OS	Microsoft Windows XP SP2, Vista, or Windows 7
CPU	Intel® Core 2 Duo® 1.66 GHz or higher is recommended AMD Athlon™ X2 Dual-Core 2.2 GHz or higher is recommended (Notebook: Intel Core2 Duo 2.2GHz or AMD Athlon X2 Dual-Core 2.6GHz or higher recommended)
RAM	1 GB and above recommended
Video Card	nVIDIA Geforce 7600GT or higher Ati X1600 series or higher
Display	1024 x 768, 16-bit colour or higher (1280 x 1024, 32-bit colour recommended)
USB	USB 2.0
Direct X	DirectX 9.0c or higher



- System requirements mentioned above are recommendations. Even on a system that satisfies the requirements, operations may not be ensured depending on the system.
- On a slower computer than recommended, video playback may skip frames or operate unexpectedly.
- When the version of DirectX on your computer is lower than 9.0c, install the programme with the version of 9.0c or higher.
- It is recommended to transfer the recorded video data to a PC before playing back or editing the video data.
- For doing this, a laptop computer requires higher system requirements than a desktop PC.

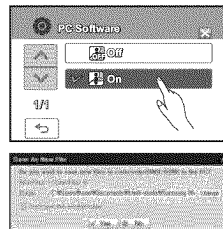
# using with a Windows computer

## USING THE Intelli-studio PROGRAMME

Using the Intelli-studio programme built-in your camcorder, you can transfer video/photo files onto your PC and edit them on your computer. Intelli-studio offers the most convenient way for you to manage the video/photo files by using the simple USB cable connection between the camcorder and your PC.

### Step 1. Connecting the USB cable

1. Set the **"USB Connect: Mass Storage"** and **"PC Software: On."**
  - You will find the default menu settings are set as the above.
2. Connect the camcorder and the PC with the USB cable.
  - A new file saving screen appears with the Intelli-studio main window.
  - According to your computer type, the corresponding removable disk window appears.
3. Click **"Yes,"** the uploading procedure will start. Click **"Yes"** to confirm.
  - If you do not want to save a new file, select **"No."**



### To disconnect the USB cable

After completing the data transfer, make sure to disconnect the cable in the following way:

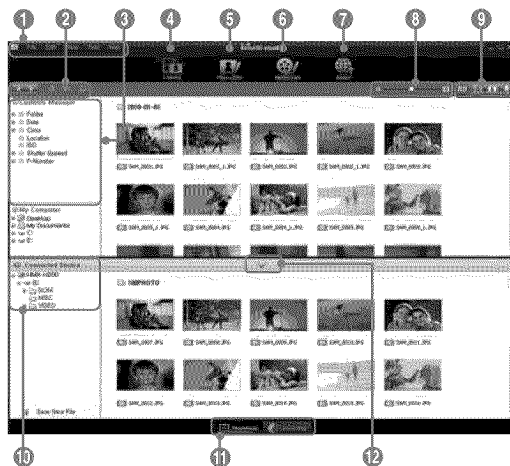
1. Click the **"Safely Remove Hardware icon"** icon on the taskbar.
2. Select **"USB Mass Storage Device,"** and then click **"Stop."**
3. If the **"Stop a Hardware device"** window appears, click **"OK."**
4. Disconnect the USB cable from the camcorder and PC.



- Use the provided USB cable. (Supplied by Samsung)
- Don't apply excessive force when inserting or extracting the USB cable into/from a USB jack.
- Insert a USB after checking the direction of its insertion is correct.
- We recommend using the AC power adaptor as the power supply instead of the battery.
- When the USB cable is connected, turning the camcorder on or off may cause the PC to malfunction
- If you disconnect the USB cable from the PC or the camcorder while transferring, the data transmission will stop and the data may be damaged.
- If you connect the USB cable to a PC via a USB HUB or simultaneously connect the USB cable along with other USB devices, the camcorder may not work properly. If this occurs, remove all USB devices from the PC and reconnect the camcorder.
- According to your computer type, the Intelli-studio programme may not automatically run. In this case, open the desired CD-ROM drive that has the Intelli-studio programme in My Computer and run iStudio.exe.
- When an USB cable is connected, according to the application programme (e.g. EmoDio) installed on your computer, the corresponding programme may start first of all.

## Step 2. About the Intelli-studio main window

When the Intelli-studio starts up, thumbnails of videos and photos are displayed in the main window.



1. Menu items
2. Shortcut icons
  - Navigates files (previous and next).
  - Prints selected photo(s).
  - Views location of selected photo(s) with GPS information.
  - Registers to Contents Manager.
3. Shows directories of Contents Manager and My Computer
  - Contents Manager: You can classify and manage videos and photos on your computer.
  - My Computer: You can view videos and photos saved in the selected directory of your computer.
4. Switches to Library of the computer and connected camcorder.
5. Switches to Photo Edit mode.
6. Switches to Movie Edit mode.
7. Switches to Share mode.
8. Changes the size of thumbnails.
9. Displays all files (videos and photos).  
 Displays video files only.  
 Displays photo files only.  
 Displays voice files only.
10. Selects the connected device.
11. Displays videos and photos in various ways.
  - Thumbnails: Displays video and photo thumbnails
  - Global Map: Displays the location of shooting place with a map.
12. Minimises the connected device screen.



Intelli-studio is a programme commonly used in Samsung camcorders or digital cameras. Some functions may not work depending on the purchased product.

# using with a Windows computer

## Step 3. Playing back the videos (or photos)

You can play back the recordings conveniently using the Intelli-studio application.

1. Run the Intelli-studio programme. ➡ page 110
2. Click the desired folder to display your recordings.
  - Video (or photo) thumbnails appear on the screen, according the selected source.
3. Choose the video (or photo) that you want to play.
  - You can check the file information by moving the mouse on over the file.
  - Clicking on a video thumbnail once will show the video playback inside the thumbnail frame, allowing you to search for a desired video with ease.
4. Once you select the desired video (or photo), double-click to play back.
  - Playback starts and playback controls appear.



The following is the file format supportable in Intelli-studio:

- Video formats: MP4 (Video: H.264, Audio: AAC), WMV (WMV 7/8/9)
- Photo formats: JPG, GIF, BMP, PNG, TIFF

## Step 4. Editing the videos (or photos)

With Intelli-studio, you can edit the videos or photos in various ways.

(Change Size, Fine-Tuning, Image Effect, Insert Frame, etc.)

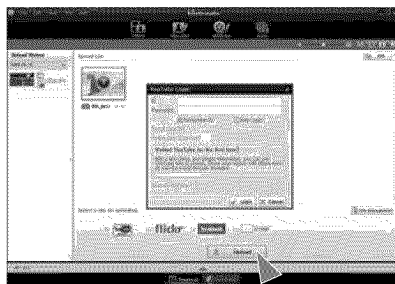
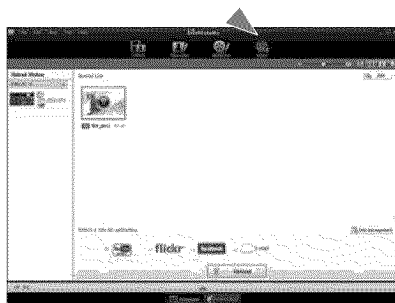
- To edit a file using the Intelli-studio, ensure to use a copy of the desired file saved in My Computer before clicking on the “Movie Edit” or “Photo Edit” icon.



## Step 5. Sharing the videos/photos online

Share your contents with the world, by uploading photos and videos directly to a web site with one click.

1. Select the desired videos or photos to share.
2. Click **"Share"** on the browser.
  - The selected file appears on the sharing window.
3. Click the web site you would like to upload files.
  - You can choose "YouTube," "Flickr," "Facebook," or the specified web site you want to set for your uploading management.
4. Click **"Upload"** to start uploading.
  - A pop up window appears asking your ID and the password.
5. Enter your ID and the password to access.
  - Access to the web site contents can be limited depending on your web access environment.



For more information about Intelli-studio use, see the Help Guide by clicking **"Help."**

**flickr**

**facebook**

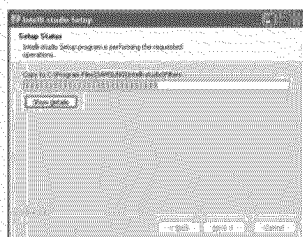
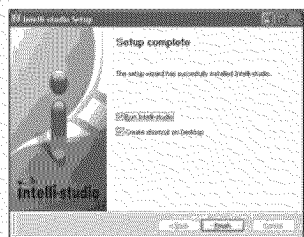
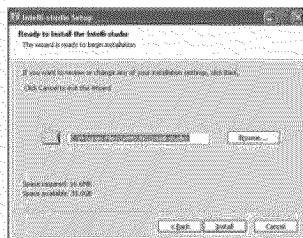
**YouTube**  
READY

- Flickr is an image and video hosting website, web services suite, and online community platform. In addition to being a popular website for users to share personal photographs, the service is widely used by bloggers as a photo repository.
- <http://www.flickr.com/>
- Facebook is a global social networking website that is operated and privately owned by Facebook, Inc. Users can add friends and send messages, and update their personal profiles to notify friends about themselves. Additionally, users can join networks organized by city, workplace, school, and region.
- <http://www.facebook.com/>
- YouTube is a video sharing website. Users can upload, view, and share personalized video clips. The San Bruno-based service uses Adobe Flash technology to display a wide variety of users-generated contents including video clips, TV clips and music videos, as well as amateur contents such as video blogging and short original videos.
- <http://www.youtube.com/>

# using with a Windows computer

## Installing Intelli-studio application on the Windows computer

- When the Intelli-studio application is installed on a Windows computer, it will run faster after connecting the camcorder to your computer. Moreover, the application can be updated automatically and run directly in the Windows computer.
- The Intelli-studio application can be installed on a Windows computer as follows:  
Click the **"Tool"** → **"Install Intelli-studio on PC"** on the Intelli-studio screen.



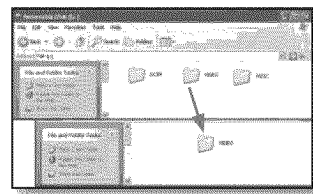
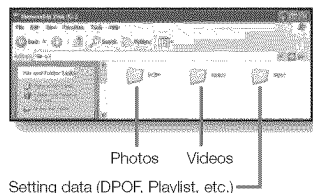
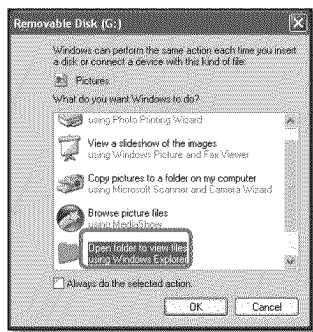


# USING AS A REMOVABLE STORAGE DEVICE

You can copy video or photo files recorded by the camcorder to a Windows computer by connecting the USB cable to the camcorder.

## Viewing the contents of storage media

1. Check out the **“USB Connect: Mass Storage”** setting.  
→ page 84
2. Check out the **“PC Software: Off”** setting. → page 83
3. Check out the storage media.
4. Connect the camcorder to the PC with the USB cable.  
→ page 110
  - The **“Removable Disk”** or **“Samsung”** window appears on the PC’s screen after a moment.
  - The removable disk appears when connecting a USB.
  - Select **“Open folders to view files using Windows Explorer”** and click **“OK.”**
5. The folders in the storage media appear.
  - Different file types are stored in different folders.
6. Select the desired folder (or files) to copy, then drag and drop it into the destination folder.
  - The folder (or files) is copied from the storage media to the PC.



- If the **“Removable Disk”** window does not appear, confirm the connection (→ page 110 or perform steps 1 and 4 again).
- When the removable disk does not appear automatically, open the removable disk folder of My Computer.
- If the connected camcorder’s disk drive does not open or the context menu that appears when right clicking your mouse (open or browse) appears broken, your computer is suspected to be infected by Autorun virus. It is recommended to update the anti-virus software for its latest version.

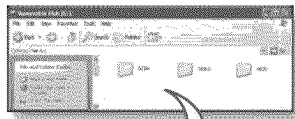
# using with a Windows computer

## Structure of folders and files on the storage media

- The folder and file structure for storage media is as follows:
- The file naming follows DCF (Design rule for Camera File System).

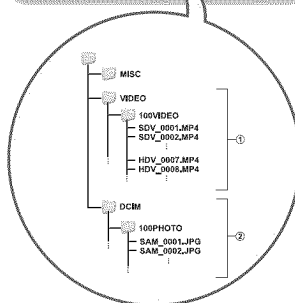
### Video file (H.264) ①

- The HD-quality videos have HDV\_####.MP4 format.
- The SD-quality videos have SDV\_####.MP4 format.
- The file number automatically increases when a new video file is created.
- A new folder is created when the number of files in a folder exceeds 999~1,000.
- The folder names are given in order of 100VIDEO, 101VIDEO. The maximum number of the folders is 999.
- The maximum of 9,999 files can be created in a storage media by using the camcorder.



### Photo file ②

- As in video files, the file number automatically increases when a new photo file is created.
- The photos have SAM\_####.JPG format.
- A new folder is created when the number of files in a folder exceeds 999~1,000.
- The folder names are given in order of 100PHOTO, 101PHOTO. The maximum number of the folders is 999.
- The maximum of 9,999 files can be created in a storage media by using the camcorder.



### File format

#### Video files

- Video files are compressed in H.264 format. The file extension is “.MP4.”
- Refer to page 54 for the video resolution.

#### Photo files

- Photo images are compressed in JPEG (Joint Photographic Experts Group) format. The file extension is “.JPG.”
- Refer to page 55 for the photo resolution.



The name of a video file recorded by the camcorder should not be modified, since proper playback by the camcorder requires original folder and file naming convention.

# troubleshooting

Before contacting a Samsung authorised service centre, perform the following simple checks. They may save you the time and expense of an unnecessary call.





## WARNING INDICATORS AND MESSAGES

Problems may occur because of the following reasons. Check the information and take corrective action.





### Battery

Message	Icon	Informs that...	Action
Low Battery	-	The battery is almost discharged.	<ul style="list-style-type: none"><li>• Replace with a charged battery or connect the AC power adaptor.</li></ul>
Check the authenticity of this battery	-	The battery can not pass authenticity check.	<ul style="list-style-type: none"><li>• Check whether the battery is authentic and change to new one.</li><li>• It is recommended that only genuine Samsung batteries are used in this camcorder.</li></ul>

### Storage media

Message	Icon	Informs that ...	Action
Internal Memory Full		There is not enough space to record on the internal memory.	<ul style="list-style-type: none"><li>• Delete unnecessary files on the internal memory.</li><li>• Back-up files to your PC or another storage media and delete files.</li><li>• Use a memory card.</li></ul>
Insert card		There is no memory card inserted in the memory card slot.	<ul style="list-style-type: none"><li>• Insert a memory card.</li></ul>
Card Full		There is not enough space to record on memory card.	<ul style="list-style-type: none"><li>• Delete unnecessary files on the memory card.</li><li>• Back-up files to PC or another storage media and delete files.</li><li>• Change memory card to another one has enough free space.</li></ul>
Card Locked		The write protection tab on an SD or SDHC card has been set to lock.	<ul style="list-style-type: none"><li>• Release write protection tab.</li></ul>


# troubleshooting

Message	Icon	Informs that ...	Action
Card Error		The memory card has some problem and can not be recognised.	<ul style="list-style-type: none"> <li>Change memory card with another one.</li> </ul>
Not Formatted		The memory card is not formatted.	<ul style="list-style-type: none"> <li>Format the memory card using the menu.</li> </ul>
Not Supported Format		The memory card may have been formatted by another device and may still have existing images on it.	<ul style="list-style-type: none"> <li>The image format is not supported. Check the supported file format.</li> <li>Format the memory card using menu item.</li> </ul>
Not Supported Card		The memory card is not supported in this camcorder.	<ul style="list-style-type: none"> <li>Change the memory card with the one recommended.</li> </ul>
Low speed card. Please record at a lower resolution.	-	The memory card does not have enough performance to record.	<ul style="list-style-type: none"> <li>Record video at a lower quality.</li> <li>Change memory card with a one.</li> </ul>

## Recording

Message	Icon	Informs that ...	Action
Write Error	-	Some problem occurred while writing data to storage media.	<ul style="list-style-type: none"> <li>Turn the camcorder's power off and on for data recovery.</li> <li>If a file is not recovered, format storage media using menus after back-up important files to PC or another storage media.</li> </ul>
Release the Smart Auto	-	You can not operate some functions manually when Smart Auto is activated.	<ul style="list-style-type: none"> <li>Release Smart Auto function.</li> </ul>
Recovering Data... Don't power off and keep card inside.	-	The file was not created normally.	<ul style="list-style-type: none"> <li>Wait until data recovery is finished.</li> <li>Never turn off the power or eject memory card during recording.</li> </ul>
The number of video files is full. Cannot record video.	-	The number of video files that can be stored is 9,999.	<ul style="list-style-type: none"> <li>Delete unnecessary files on the storage media.</li> <li>Back up files to your PC or another storage media and delete files.</li> <li>Change with another card which has enough free space.</li> </ul>

## Recording

Message	Icon	Informs that ...	Action
The number of photo files is full. Cannot take a photo.	-	The number of photo files that can be stored is 9,999.	<ul style="list-style-type: none"> <li>Delete unnecessary files on the storage media.</li> <li>Back up files to your PC or another storage media and delete files.</li> <li>Change with another card which has enough free space.</li> </ul>
File number is full. Cannot record video.	-	Folder and file number have reached maximum number and you can not record.	<ul style="list-style-type: none"> <li>Set "<b>File No.</b>" to "<b>Reset</b>" and format the storage media.</li> </ul>
File number is full. Cannot take a photo.	-	Folder and file number have reached maximum number and you can not record.	<ul style="list-style-type: none"> <li>Set "<b>File No.</b>" to "<b>Reset</b>" and format the storage media.</li> </ul>
Check the lens cover.		Lens cover is closed.	<ul style="list-style-type: none"> <li>Open the lens cover.</li> </ul>

## Playback

Message	Icon	Informs that ...	Action
Total file size is over 1.8GB.	-	Total file size that can be combined is limited to 1.8GB.	<ul style="list-style-type: none"> <li>Combined files must be less than 1.8GB.</li> </ul>
Select 2 files for combine.	-	You can not combine more than 2 different videos into one.	<ul style="list-style-type: none"> <li>It is possible to combine up to 2 different videos into one.</li> </ul>
Cannot select different resolution	-	The files you want to combine have different resolutions.	<ul style="list-style-type: none"> <li>It is not possible to combine the files that have different resolutions.</li> </ul>
Read Error	-	Some problems occurred when reading data from the storage media.	<ul style="list-style-type: none"> <li>Format the storage media using menus after backing up important files to a PC or another storage device.</li> </ul>
Corrupted file	-	This file can not be read.	<ul style="list-style-type: none"> <li>Format the storage media using menus after back up important files to a PC or another storage device.</li> </ul>
Not enough free space in Internal Memory	-	File editing functions can not be performed because there is not enough free space in the internal memory.	<ul style="list-style-type: none"> <li>Delete unnecessary files on the storage media.</li> <li>Back up files to a PC or another storage media and delete files.</li> </ul>
Not enough free space in Card	-	File editing functions can not be performed because there is not enough free space in the memory card.	<ul style="list-style-type: none"> <li>Delete unnecessary files on the storage media.</li> <li>Back up files to a PC or another storage media and delete files.</li> </ul>

# troubleshooting

## USB

Message	Icon	Informs that...	Action
Fail Printer Connecting Change 'USB Connect'	-	A problem occurred when connecting the camcorder via USB to a printer.	<ul style="list-style-type: none"><li>• Check the USB cable.</li><li>• Try the connection procedure again.</li><li>• Switch <b>"USB connect"</b> function to <b>"PictBridge."</b></li></ul>
Fail USB Connecting Change 'USB Connect'	-	A problem occurred when connecting the camcorder via USB to a PC.	<ul style="list-style-type: none"><li>• Check the USB cable.</li><li>• Try the connection procedure again.</li><li>• Switch <b>"USB connect"</b> function to <b>"Mass Storage."</b></li></ul>
Ink Error	-	There is a problem with the ink cartridge.	<ul style="list-style-type: none"><li>• Check the ink cartridge.</li><li>• Put a new ink cartridge in the printer.</li></ul>
Paper Error	-	There is a problem with the paper.	<ul style="list-style-type: none"><li>• Check the paper in the printer. If there is no paper, insert the paper.</li></ul>
File Error	-	There is a problem with the file.	<ul style="list-style-type: none"><li>• Your camcorder does not support this file format.</li><li>• Try another file recorded on your camcorder.</li></ul>
Printer Error	-	There is a problem with the printer.	<ul style="list-style-type: none"><li>• Turn the printer's power off and on.</li><li>• Contact the printer manufacturer's service centre.</li></ul>
Print Error	-	A problem occurred during printing.	<ul style="list-style-type: none"><li>• Do not remove power source or eject memory card during printing.</li></ul>



### When there is dew condensation, put the camcorder aside for a while before using

- What is dew condensation?  
Dew condensation happens when a camcorder is moved to a place where there is a significant temperature difference from the previous place. The Dew condenses on the external or internal parts of the camcorder, and on the reflection lens. When this happens, it may cause a malfunction or damage to the camcorder when using the device with the power on while there is dew condensation.
- What can I do?  
Turn the power off and detach the battery, and leave it in a dry area for 1~2 hours before using it.
- When does the dew condensation occur?  
When the device is relocated to a place with a higher temperature than the previous location, or when using it in a hot area suddenly, it will cause condensation.
  - When recording outside in cold weather during the winter and then using it indoors.
  - When recording outside in hot weather after being indoors or inside a car where the A/C was running.

# SYMPTOMS AND SOLUTIONS

If these instructions do not solve your problem, contact your nearest Samsung authorised service centre.

## Power

Symptom	Explanation/Solution
The camcorder does not turn on.	<ul style="list-style-type: none"><li>• The battery may not be installed on your camcorder. Insert the battery to the camcorder.</li><li>• The inserted battery may be discharged. Charge the battery or replace it with a charged one.</li><li>• If you use the AC power adaptor, make sure it is properly connected to a wall outlet.</li></ul>
The power turns off automatically.	<ul style="list-style-type: none"><li>• Is <b>"Auto Power Off"</b> set to <b>"5 Min"</b>? If no button is pressed for about 5 minutes, the camcorder is automatically turned off (<b>"Auto Power Off"</b>). To disable this option, change the setting of <b>"Auto Power Off"</b> to <b>"Off."</b> ➔ page 81</li><li>• The battery is almost exhausted. Charge the battery or replace it with a charged one.</li></ul>
Power cannot be turned off.	<ul style="list-style-type: none"><li>• Remove the battery or unplug AC power adaptor, and connect the power supply to the camcorder again before turning it on.</li></ul>
The battery is quickly discharged.	<ul style="list-style-type: none"><li>• The temperature is too low.</li><li>• The battery is not fully charged. Charge the battery again.</li><li>• The battery reached its lifespan and cannot be recharged. Use another battery.</li></ul>

## Display

Symptom	Explanation/Solution
The TV screen or LCD display has distorted images or has stripes at the top/bottom or on the left/right.	<ul style="list-style-type: none"><li>• It can occur when recording or viewing a 16:9-ratio image on a 4:3-ratio TV, or vice versa. For more details, see the display specification. ➔ page 106</li></ul>
Unknown image appears on the LCD screen.	<ul style="list-style-type: none"><li>• The camcorder is in Demo mode. If you do not want to see Demo image, change the setting <b>"Demo"</b> to <b>"Off."</b> ➔ page 88</li></ul>
Unknown indicator appears on the screen.	<ul style="list-style-type: none"><li>• A warning indicator or message appears on the screen. ➔ pages 117~120</li></ul>
The afterimage remains on the LCD screen.	<ul style="list-style-type: none"><li>• This occurs if you disconnect the AC power adaptor or remove the battery before turning the power off.</li></ul>
The image on the LCD screen looks dark.	<ul style="list-style-type: none"><li>• Ambient light too bright. Adjust the brightness and angle of LCD.</li></ul>

# troubleshooting

## Recording

Symptom	Explanation/Solution
Pressing the <b>Recording start/stop</b> button does not start recording.	<ul style="list-style-type: none"> <li>Press the <b>MODE</b> button to set the record mode. ➡page 23</li> <li>There is not enough free space to record on the storage media.</li> <li>Check if memory card is not inserted or write-protect tab is set to lock.</li> </ul>
The actual recording time is less than the estimated recording time.	<ul style="list-style-type: none"> <li>The estimated recording time may vary depending on content and features used.</li> <li>When you record an object that moves fast, the actual recording time may be shortened.</li> </ul>
The recording stops automatically.	<ul style="list-style-type: none"> <li>There is no more free space for recording on the storage media. Back up important files on your PC and format the storage media or delete the unnecessary files.</li> <li>If you make recordings or delete files frequently, the performance of the storage media will be deteriorated. In this case, format the storage media again.</li> <li>If you use the memory card with low writing speed, the camcorder automatically stops recording the videos and the corresponding message appears on the LCD screen.</li> </ul>
When recording a subject illuminated by bright light, a vertical line appears.	<ul style="list-style-type: none"> <li>This is not a malfunction.</li> </ul>
When the screen is exposed to direct sunlight during recording, the screen becomes red or black for an instant.	<ul style="list-style-type: none"> <li>This is not a malfunction.</li> </ul>
During recording, the date/time does not display.	<ul style="list-style-type: none"> <li><b>"Date/Time Display"</b> is set to <b>"Off."</b> Set the <b>"Date/Time Display"</b> to On. ➡page 78</li> </ul>
You cannot record a photo image.	<ul style="list-style-type: none"> <li>Set your camcorder to the record mode. ➡page 23</li> <li>Release the lock on the write-protection tab of the memory card if any.</li> <li>The storage media is full. Use a new memory card or format the storage media. ➡page 75 Or remove unnecessary images. ➡page 97</li> </ul>
The shutter sound is not heard when you record a photo image.	<ul style="list-style-type: none"> <li>Set <b>"Shutter Sound"</b> to <b>"On."</b></li> <li>During dual recording, the Shutter Sound is not heard.</li> </ul>
The beep sound is not heard.	<ul style="list-style-type: none"> <li>Set <b>"Beep Sound"</b> to <b>"On."</b></li> <li>Beep sound is temporally off while recording videos.</li> </ul>



## Recording

Symptom	Explanation/Solution
There is a time difference between the point where you press the <b>Recording start/stop</b> button and the point where the recorded video starts/stops.	<ul style="list-style-type: none"> <li>On your camcorder, there may be a slight time delay between the point when you press the <b>Recording start/stop</b> button and the actual point where the recorded video starts/stops. This is not an error.</li> </ul>
Horizontal stripes appear on the images.	<ul style="list-style-type: none"> <li>This occurs when recording images under a fluorescent lamp, sodium lamp, or mercury lamp. This is not a malfunction.</li> </ul>

## Storage Media

Symptom	Explanation/Solution
Memory card functions are not operable.	<ul style="list-style-type: none"> <li>Insert a memory card into your camcorder properly. ➡ page 28</li> <li>If you use a memory card formatted on a computer, format it again directly on your camcorder. ➡ page 75</li> </ul>
Image cannot be moved or deleted.	<ul style="list-style-type: none"> <li>Release the lock on the write-protect tab of the memory card (SDHC/SD memory card), if any. ➡ page 29</li> <li>You cannot move or delete the protected images. Release the protection of the image on the storage media. ➡ page 96</li> </ul>
You cannot format the memory card.	<ul style="list-style-type: none"> <li>Release the lock on the write-protect tab of the memory card (SDHC/SD memory card), if any. ➡ page 29</li> <li>The memory card is not supported on your camcorder or card has some problems.</li> </ul>
The data file name is not indicated correctly.	<ul style="list-style-type: none"> <li>The file may be corrupted.</li> <li>The file format is not supported by your camcorder.</li> <li>Only the file name is displayed if the directory structure complies with the international standard.</li> </ul>

# troubleshooting

## Adjusting the image during recording

Symptom	Explanation/Solution
Focus does not adjust automatically.	<ul style="list-style-type: none"><li>• Set <b>"Focus"</b> to <b>"Auto."</b> ➔page 60</li><li>• The recording conditions are not suitable for auto focus. Adjust the focus manually. ➔page 60</li><li>• The lens is dusty on the surface. Clear the lens and check the focus.</li><li>• Recording is being made in a dark location. Use a light to brighten the area.</li></ul>
The image appears too bright or flickering, or changes in colour.	<ul style="list-style-type: none"><li>• This may occur when you make a recording under a fluorescent sodium or or mercury lamp. Cancel <b>"tSCENE"</b> to avoid or minimise this phenomenon. ➔page 53</li></ul>
Image's colour balance is not natural.	<ul style="list-style-type: none"><li>• White balance adjustment is required. Adjust to the proper <b>"White Balance."</b> ➔page 56</li></ul>
The subject passing by the frame appears very quickly.	<ul style="list-style-type: none"><li>• This is called the focal plane phenomenon. This is not a malfunction. Because of the way the image device (CMOS sensor) reads out video signals, the subject passing by the frame rapidly may appear to bend, depending on the recording condition.</li></ul>

## Playback on your camcorder

Symptom	Explanation/Solution
Playback (play/pause) function does not work.	<ul style="list-style-type: none"><li>• Image files recorded using another device may not be played on your camcorder.</li><li>• Check out the memory card compatibility. ➔page 29</li></ul>
Photo images stored on a storage media are not displayed in the actual size.	<ul style="list-style-type: none"><li>• Photo images recorded on other device may not appear in the actual size. This is not an error.</li></ul>
Playback is interrupted unexpectedly.	<ul style="list-style-type: none"><li>• Check if the AC power adaptor or battery back is properly connected and secure.</li></ul>

## Playback on other devices (TV, etc.)

Symptom	Explanation/Solution
You cannot view the image or hear the sound from the connected device.	<ul style="list-style-type: none"> <li>Connect the audio of the component/AV cable to your camcorder or connected device (TV, HD recorder, etc.). (Red colour- right, White colour- left)</li> <li>The connection cable (component/AV cable) is not connected properly. Make sure that the connection cable is connected to the proper jack. →pages 103~104</li> <li>When you are using the component/AV cable, make sure the red and white plugs of your component/AV cable are connected. →pages 103~104</li> <li>This camcorder does not support the audio output signal when the camcorder is connected with TV in the record mode. The audio output signal is supported as long as the camcorder is connected in the video playback mode. This is not an error.</li> </ul>
The image appears distorted on a TV.	<ul style="list-style-type: none"> <li>This phenomenon is caused by connecting to the TV with 4:3 aspect ratio.</li> </ul>
You cannot view the image or hear the sound from a TV connected using the HDMI cable.	<ul style="list-style-type: none"> <li>Images will not be output from the HDMI jack if the material is copyright protected.</li> </ul>

## Connecting/Dubbing with other devices (Recorder, PC, Printer, etc.)

Symptom	Explanation/Solution
You cannot dub correctly using the HDMI cable.	<ul style="list-style-type: none"> <li>You cannot dub images using the HDMI cable.</li> </ul>
You cannot dub correctly using the component/AV cable.	<ul style="list-style-type: none"> <li>The component/AV cable is not connected properly. Make sure that the component/AV cable is connected to the proper jack, i.e. to the input jack of the device used for dubbing images from your camcorder. →page 107</li> </ul>
Printouts cannot be made using a PictBridge printer.	<ul style="list-style-type: none"> <li>Your printer may not print images edited on a computer or recorded using other device. This is not an error.</li> </ul>

# troubleshooting

## Connecting to a computer

Symptom	Explanation/Solution
The computer does not recognise your camcorder.	<ul style="list-style-type: none"><li>• Disconnect the USB cable from the computer and camcorder, restart the computer, then connect it again correctly.</li></ul>
Cannot play a video file properly on a PC.	<ul style="list-style-type: none"><li>• A video codec is needed to play the file recorded on your camcorder. Install the software provided with your camcorder. ➡ page 114</li><li>• Make sure you insert the connector in the correct direction, and connect the USB cable to the USB jack on your camcorder firmly.</li><li>• Disconnect the cable from the computer and camcorder, restart the computer. Connect it again properly.</li><li>• To play back an HD video file, a computer with better specification is required. Check a computer with recommended specification. ➡ page 109</li></ul>
Intelli-studio does not function properly.	<ul style="list-style-type: none"><li>• Exit the Intelli-studio application, and restart the Windows computer.</li></ul>
Intelli-studio is not performed.	<ul style="list-style-type: none"><li>• Set PC Software to On in the Settings menu or install Intelli-studio in the computer. ➡ pages 83, 114</li></ul>
The image or sound on your camcorder is not played on your computer properly.	<ul style="list-style-type: none"><li>• Video playback or sound may stop temporarily depending on your computer. The video or sound copied to your computer is not affected.</li><li>• If your camcorder is connected to a computer that does not support Hi-speed USB (USB2.0), the image or sound may not be played correctly. The image and sound copied to your computer are not affected.</li></ul>
The playback screen is paused or distorted.	<ul style="list-style-type: none"><li>• Check the system requirements to play a video.</li><li>• Exit other all applications running on the current computer.</li><li>• If a recorded video is played on your camcorder connected to a computer, the image may not play smoothly, depending on the transfer speed. Please copy the file to your PC, and then play it back.</li></ul>

## Overall operations

Symptom	Explanation/Solution
The date and time are incorrect.	<ul style="list-style-type: none"> <li>Has the camcorder been left unused for a long period of time? The backup built-in rechargeable battery may be discharged. → page 25</li> </ul>

## Menu items that cannot be used at the same time

Symptom	Cannot use	Because of the following settings
Menu items are greyed out	"iSCENE"	"Aperture : Manual," "Shutter : Manual"
	"Aperture: Manual"	"Shutter : Manual," "iSCENE"
	"Shutter: Manual"	"Aperture : Manual," "iSCENE"
	"Video Resolution," "Video Quality," "Fader"	"Time Lapse REC"
	"Photo Resolution"	"Cont. Shot"

- You cannot select greyed items in the current recording/playback mode.
- There are some functions you cannot activate simultaneously.  
The list shown above shows examples of unworkable combinations of functions and menu items.
- Menu and quick menu cannot be used in Smart Auto mode.
- The following functions cannot be used during video recording:  
"Video Resolution," "Video Quality," "Photo Resolution," "Photo Sharpness," "Fader,"  
"Cont.Shot," "Digital Zoom," "Self Timer," "Time Lapse REC."
- The following functions are automatically set to Off or Auto mode in the Smart Auto mode:  
"iSCENE," "Shutter," "Digital Effect", "Tele Macro", etc.
- In the Smart Auto mode, your camcorder automatically chooses the appropriate camcorder settings based on a detected type of scene. Most settings are automatically adjusted in Smart Auto mode. And so, to set or adjust functions on your own, release the Smart Auto mode first.

# maintenance & additional information

## MAINTENANCE

Your camcorder is a product of superior design and craftsmanship and should be treated with care.

The suggestions below will help you fulfill any warranty obligations and allow you to enjoy this product for many years.

- For safekeeping of the camcorder, turn off the camcorder.
  - Remove the battery and AC power adaptor. ➡ pages 16, 20
  - Remove the memory card. ➡ page 28

### Cautions when storing

- **Do not leave the camcorder in a place where the temperature is very high for a long period of time:**  
The temperature inside a closed vehicle or trunk can become very high in a hot weather. If you leave the camcorder in such a place, it could malfunction or the case could be damaged. Do not expose the camcorder to a direct sunlight or place it near a heater.
- **Do not store the camcorder in a place where the humidity is high or in a dusty place:**  
Dust entering the camcorder could cause a malfunction. If humidity is high, the lens could become mouldy, and the camcorder could become inoperative. It is recommended that you put the camcorder in a box together with a small silica bag when storing it in a closet, etc.
- **Do not store the camcorder in a place subject to strong magnetism or intense vibration:**  
This could cause malfunctions.
- **Detach the battery from the camcorder and store it in a cool place:**  
Leaving the battery attached or storing it at a high temperature could shorten its life.

### Cleaning the camcorder

Before cleaning, turn off the camcorder and remove the battery and AC power adaptor.

- **To clean the exterior**
  - Wipe gently with a soft dry cloth. Do not apply excessive force when cleaning, gently rub the surface.
  - Do not use benzene or thinner to clean the camcorder. The coating of exterior could peel off or the case could deteriorate.
- **To fix the case the LCD screen**  
Wipe gently with a soft dry cloth. Be careful not to damage the monitor.
- **To clean the lens**  
Use an optional air blower to blow out dirt and other small objects. Do not wipe the lens with cloth or your fingers.  
If necessary, wipe gently with lens with a paper.
  - Mould may form if the lens is left dirty.
  - If the lens looks dim, turn off the camcorder and leave it for about 1 hour.

## ADDITIONAL INFORMATION

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### Storage media

- **Be sure to follow the guidelines below to prevent corruption or damage to your recorded data.**
  - Do not bend or drop the storage media, or subject it to strong pressure, jolts or vibrations.
  - Do not splash the storage media with water.
  - Do not use, replace, or store the storage media in locations that are exposed to a strong static electricity or electrical noise.
  - Do not turn off the camcorder power or remove the battery or AC power adaptor during recording, playback, or when accessing the storage media.
  - Do not bring the storage media near to objects that have a strong magnetic field or that emit strong electromagnetic waves.
  - Do not store the storage media in locations with high temperature or high humidity.
  - Do not touch the metal parts.
- **Copy the recorded files to your PC. Samsung shall not be responsible for any lost data. (It is recommended that you copy the data from your PC to other media for storage.)**
- **A malfunction may cause the storage media to fail to operate properly. Samsung will not provide any compensation for any lost contents.**

### LCD screen

**Before cleaning, turn off the camcorder and remove the battery and AC power adaptor.**

- **To clean the exterior**
  - Do not push it too hard or knock it on anything.
  - Do not place the camcorder with the LCD screen facing the bottom.
- **To prolong the service life, avoid rubbing it with a coarse cloth.**
- **Be aware of the following phenomena for LCD screen use. They are not malfunctions.**
  - While using the camcorder, the surface around the LCD screen may heat up.
  - If you leave power on for a long time, the surface around the LCD screen becomes hot.

# maintenance & additional information

## USING YOUR CAMCORDER ABROAD

- Each country or region has its own electric and colour systems.
- Before using your camcorder abroad, check the following items.

### Power sources

The provided AC adaptor features automatic voltage selection in the AC range from 100 V to 240 V. You can use your camcorder in any countries/regions using the AC power adaptor supplied with your camcorder within the AC 100 V to 240 V, 50/60 Hz range.

Use a commercially available AC plug adaptor, if necessary, depending on the design of the wall outlet.

### Viewing videos recorded with HD (high definition) image quality

In countries/regions where 1080/50i is supported, you can view the images with the same HD (high definition) image quality as that of the recorded images. You need an **PAL**-system-based and 1080/50i compatible TV (or monitor) with an HDMI or component/AV cable connected.

### Viewing videos recorded with SD (standard definition) image quality

To view images recorded with SD (standard definition) image resolution, you need an **PAL**-system-based TV with audio/video or component input jacks, and an component/AV cable connected.

### On TV colour systems

Your camcorder is an **PAL**-system-based camcorder.

If you want to view your recordings on a TV or to copy it to an external device, it must be an **PAL**-system-based TV or an external device and have the appropriate Audio/Video jacks. Otherwise, you may need to use a separate video format transcoder (PAL-NTSC format converter).



The format transcoder is not provided by Samsung.

### **PAL-compatible countries/regions**

Australia, Austria, Belgium, Bulgaria, China, CIS, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Great Britain, Holland, Hong Kong, Hungary, India, Iran, Iraq, Kuwait, Libya, Malaysia, Mauritius, Norway, Romania, Saudi Arabia, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Syria, Thailand, Tunisia, etc.

### **NTSC-compatible countries/regions**

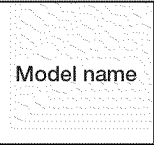
Bahamas, Canada, Central America, Japan, Korea, Mexico, Philippines, Taiwan, United States of America, etc.



You can make recordings with your camcorder and view pictures on the LCD screen from anywhere in the world.



# specifications

 <b>Model name</b>	<b>                     HMX-H200BP/HMX-H200SP/HMX-H200LP/HMX-H200RP                      HMX-H203BP/HMX-H203SP/HMX-H203LP/HMX-H203RP                      HMX-H204BP/HMX-H204SP/HMX-H204LP/HMX-H204RP                      HMX-H205BP/HMX-H205SP/HMX-H205LP/HMX-H205RP                      HMX-H220BP/HMX-H220SP/HMX-H220LP/HMX-H220RP                 </b>	
<b>System</b>	<b>Video signal</b> <b>Picture compression format</b> <b>Audio compression format</b> <b>Image device</b> <b>Lens</b>  <b>Focal length</b> <b>Filter diameter</b>	PAL H.264 (MPEG-4.AVC) AAC (Advanced Audio Coding) 1/4.1", 3.32M Pixel CMOS F1.8 ~ F3.7, 20x optical zoom, 200x digital zoom 3.2mm ~ 64mm Ø 34
<b>LCD screen</b>	<b>Size/dot number</b> <b>LCD screen method</b>	2.7" Wide Touch LCD (960x240) / 230k TFT LCD
<b>Connectors</b>	<b>Composite output</b> <b>Component output</b>  <b>HDMI output</b> <b>Audio output</b> <b>USB output</b>	1Vp-p (75 Ω terminated) Y: 1 Vp-p, 75 Ω Pb/Pb: 0.350Vp-p, 75 Ω C type connector -7.5 dBs (600 Ω terminated) mini USB-B type (USB2.0 High Speed)
<b>General</b>	<b>Power source</b> <b>Power source type</b>  <b>Power consumption</b> (Recording) <b>Operating temperature</b> <b>Storage temperature</b> <b>Storage media</b>  <b>External dimensions</b> (WxHxD) <b>Weight</b>  <b>Internal MIC</b>	DC 5 V, Lithium Ion battery pack 3.7 V Lithium Ion battery pack, Power supply (100 V ~ 240 V) 50/60 Hz 3.2W (LCD on)  0 °C ~ 40 °C (32 °F ~ 104 °F) -20 °C ~ 60 °C (-4 °F ~ 140 °F) Internal memory (SSD) (HMX-H203/H204/H205 only), Memory card (SD/SDHC) (optional) Approx. 58.5 mm (2.3 inches) x 59.3 mm (2.33 inches) x 111.65 mm (4.4 inches) Approx. 283 g (0.62 lb, 9.98 oz) (Except for Lithium Ion battery) Omni-directional stereo microphone

※ These technical specifications and design may be changed without notice.

# Power Sources (United Kingdom Only)

The mains lead on the power adapter is supplied with a moulded plug incorporating a fuse.

The value of the fuse is indicated on the pin face of the plug and, if it requires replacing, a fuse approved to BS1362 of the same rating must be used.

Never use the plug with the fuse cover omitted if the cover is detachable.

If a replacement fuse cover is required, it must be of the same colour as the pin face of the plug. Replacement covers are available from your dealer.

If the fitted plug is not suitable for the power points in your house or the cable is not long enough to reach a power point, you should obtain a suitable safety approved extension lead or consult your dealer for assistance.

However, if there is no alternative to cutting off the plug, remove the fuse and then safely dispose of the plug.

Do NOT connect the plug to a mains socket as there is a risk of shock hazard from the bared flexible cord.

## IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

BLUE = NEUTRAL

BROWN = LIVE

As these colours may not correspond to the coloured markings identifying the terminals in your plug, proceed as follows:

The wire coloured BLUE must be connected to the terminal marked with the letter N or coloured BLUE or BLACK.

The wire coloured BROWN must be connected to the terminal marked with the letter L or coloured BROWN or RED.



Do not connect either wire to the earth terminal marked with the letter E or the earth symbol, , or coloured GREEN or GREEN and YELLOW.

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This page is applicable to Great Britain only.

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# Contact SAMSUNG WORLDWIDE

If you have any questions or comments relating to Samsung products, please contact the SAMSUNG customer care centre.

Region	Country	Contact Centre ☎	Web Site
North America	CANADA	1-800-SAMSUNG(726-7864)	www.samsung.com
	MEXICO	01-800-SAMSUNG(726-7864)	www.samsung.com
	U.S.A.	1-800-SAMSUNG(726-7864)	www.samsung.com
	ARGENTINE	0800-333-3733	www.samsung.com
	BRAZIL	0800-124-421, 4004-0000	www.samsung.com
	CHILE	800-SAMSUNG(726-7864)	www.samsung.com
	Nicaragua	00-1800-5077267	www.samsung.com
	Honduras	800-7919267	www.samsung.com
	COSTA RICA	0-800-507-7267	www.samsung.com
	ECUADOR	1-800-10-7267	www.samsung.com
Latin America	EL SALVADOR	800-8225	www.samsung.com
	GUATEMALA	1-800-299-0013	www.samsung.com
	JAMAICA	1-800-254-7267	www.samsung.com
	PANAMA	800-7267	www.samsung.com
	PUERTO RICO	1-800-493-3180	www.samsung.com
	REP. DOMINICA	1-800-751-2676	www.samsung.com
	TRINIDAD & TOBAGO	1-800-SAMSUNG(726-7864)	www.samsung.com
	VENEZUELA	0-800-100-5303	www.samsung.com
	COLOMBIA	01-600011212	www.samsung.com
	AUSTRIA	0610 - SAMSUNG (7267864, € 0.07/min)	www.samsung.com
Europe	BELGIUM	02-201-24-18	www.samsung.com
	CZECH	800 - SAMSUNG(800-726786)	www.samsung.com/be (Dutch) www.samsung.com/be_fr (French)
	DENMARK	70 70 19 10	www.samsung.com
	FINLAND	030 - 6227 515	www.samsung.com
	FRANCE	01 48 63 00 00	www.samsung.com
	GERMANY	01805 - SAMSUNG(726-7864 € 0.14/Min)	www.samsung.com
	HUNGARY	06-80-SAMSUNG(726-7864)	www.samsung.com
	ITALY	800-SAMSUNG(726-7864)	www.samsung.com
	LUXEMBURG	261 03 710	www.samsung.com
	NETHERLANDS	0800-SAMSUNG (0800-7267864) (€ 0.10/Min)	www.samsung.com
	NORWAY	815-66 480	www.samsung.com
	POLAND	0 801 1SAMSUNG(172678), 022-807-83-33	www.samsung.com
	PORTUGAL	80020-SAMSUNG(726-7864)	www.samsung.com
	SLOVAKIA	0800-SAMSUNG(726-7864)	www.samsung.com
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	SWEDEN	0771 726 7864 (SAMSUNG)	www.samsung.com
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	IRELAND	0818 717 100	www.samsung.com
	Switzerland	0848 - SAMSUNG(7267864, CHF 0.08/min)	www.samsung.com/ch www.samsung.com/ch_fr(French)
	LITHUANIA	8-800-77777	www.samsung.com
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	Armenia	0-800-06-555	
	Azerbaijan	088-55-55-555	
	KAZAKHSTAN	8-10-800-500-55-500	
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	TADJIKISTAN	8-10-800-500-55-500	www.samsung.com
	UKRAINE	0-800-502-000	www.samsung.ua www.samsung.com/ua_ru
Asia Pacific	Belarus	810-800-500-55-500	
	Moldova	00-500-500-55-500	
	Australia	1300 362 603	www.samsung.com
	New Zealand	0800 SAMSUNG (0800 726 786)	www.samsung.com
	CHINA	400-810-6868, 010-6475 1880	www.samsung.com
	HONG KONG	(852) 3998-4698	www.samsung.com/hk www.samsung.com/hk_en/
	INDIA	3030 8282, 1800 110011, 1800 3000 6282, 1800 266 6282	www.samsung.com
	INDONESIA	0800-112-8888, 021-5699-7777	www.samsung.com
	JAPAN	0120-321-527	www.samsung.com
	MALAYSIA	1800-88-9999	www.samsung.com
Middle East & Africa	PHILIPPINES	1-800-10-SAMSUNG(726-7864), 1-800-3-SAMSUNG(726-7864), 1-800-8-SAMSUNG(726-7864), 02-5805777	www.samsung.com
	SINGAPORE	1800-SAMSUNG(726-7864)	www.samsung.com
	THAILAND	1800-29-3232, 02-689-3232	www.samsung.com
	TAIWAN	0800-326-999	www.samsung.com
	VIETNAM	1 800 588 889	www.samsung.com
	Turkey	444 77 11	www.samsung.com
	SOUTH AFRICA	0860-SAMSUNG(726-7864)	www.samsung.com
	U.A.E.	800-SAMSUNG (726-7864)	www.samsung.com
	Bahrain	8000-4726	www.samsung.com
	Jordan	800-22273	
	Egypt	0800-726786	
	KSA	9200-21230	www.samsung.com
	Qatar	800-2265	
	Syria	1825-22-73	



### **RoHS compliant**

Our product complies with "The Restriction Of the use of certain Hazardous Substances in electrical and electronic equipment", and we do not use the 6 hazardous materials- Cadmium(Cd), Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr +6), Poly Brominated Biphenyls (PBBs), Poly Brominated Diphenyl Ethers(PBDEs)- in our products.